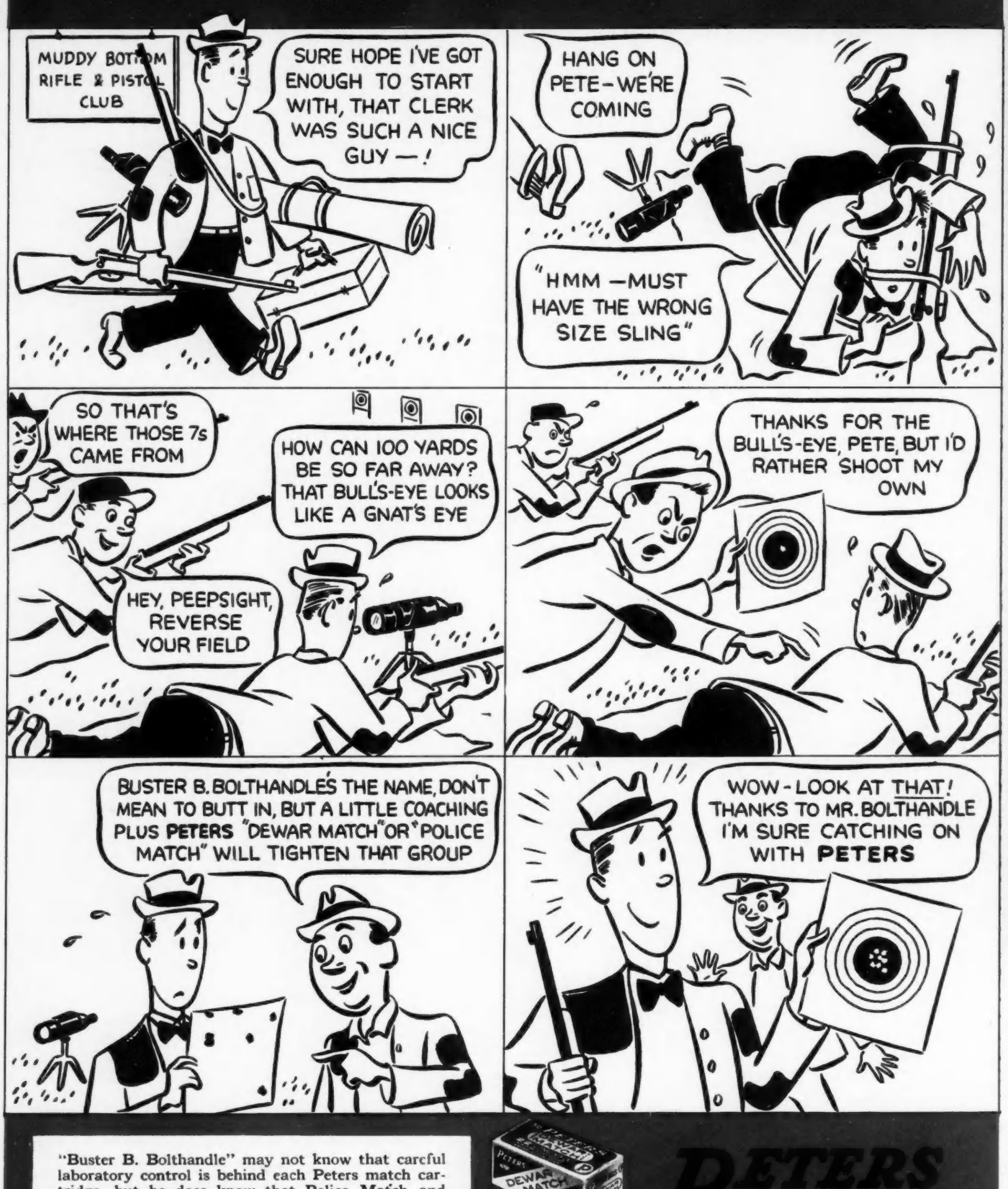
# AN RIFLEMAN

Mr. Albin E. McNamara,
196-41- 45th Ave.,
Flushing, N. Y. L' 11/28/36

"Civilians under Arms"

# Peter Peepsight catches on!


MUDDY BOTTOM RIFLE & PISTOL CLUB
SURE HOPE I'VE GOT ENOUGH TO START WITH, THAT CLERK WAS SUCH A NICE GUY —!
HANG ON PETE—WE'RE COMING
"HMM —MUST HAVE THE WRONG SIZE SLING"
SO THAT'S WHERE THOSE 7s CAME FROM
HOW CAN 100 YARDS BE SO FAR AWAY? THAT BULL'S-EYE LOOKS LIKE A GNAT'S EYE
HEY, PEEPSIGHT, REVERSE YOUR FIELD
THANKS FOR THE BULL'S-EYE, PETE, BUT I'D RATHER SHOOT MY OWN
BUSTER B. BOLTHANDLE'S THE NAME, DON'T MEAN TO BUTT IN, BUT A LITTLE COACHING PLUS PETERS "DEWAR MATCH" OR "POLICE MATCH" WILL TIGHTEN THAT GROUP
WOW-LOOK AT THAT! THANKS TO MR. BOLTHANDLE I'M SURE CATCHING ON WITH PETERS

"Buster B. Bolthandle" may not know that careful laboratory control is behind each Peters match cartridge, but he does know that Police Match and Dewar Match shoot tight groups. That's why he gave the tip to our hero, Peter Peepsight. If you haven't shot "Peters" lately, why not try it soon and see some of the tightest grouping you and your rifle have ever produced?

PETERS
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POLICE MATCH

PETERS
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Remington Arms Co., Inc., Bridgeport, Conn.
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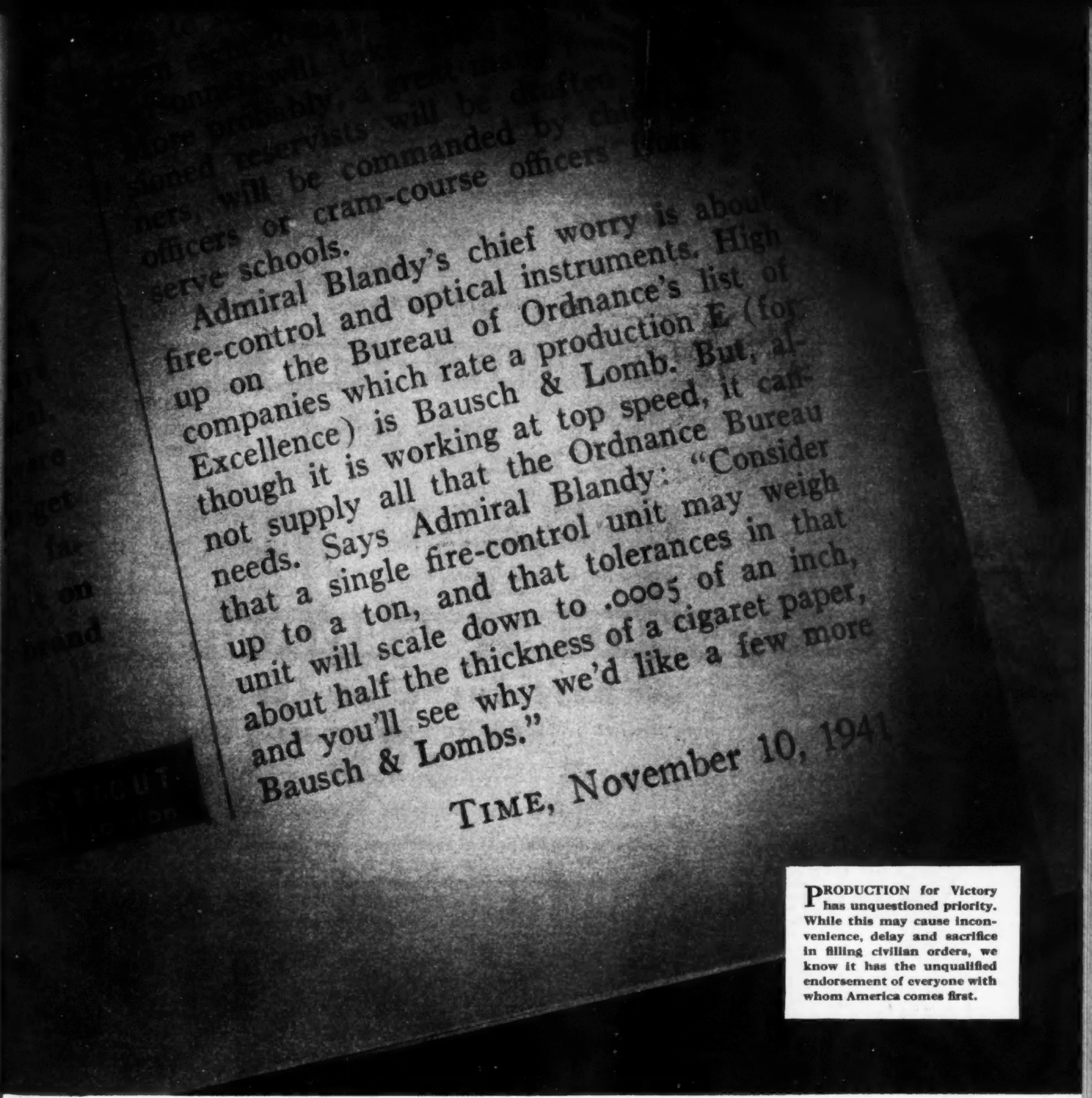

More probably, a great many … sioned reservists will be drafted … ners, will be commanded by … officers or cram-course officers from … serve schools.

Admiral Blandy's chief worry is about fire-control and optical instruments. High up on the Bureau of Ordnance's list of companies which rate a production E (for Excellence) is Bausch & Lomb. But, although it is working at top speed, it cannot supply all that the Ordnance Bureau needs. Says Admiral Blandy: "Consider that a single fire-control unit may weigh up to a ton, and that tolerances in that unit will scale down to .0005 of an inch, about half the thickness of a cigaret paper, and you'll see why we'd like a few more Bausch & Lombs."

TIME, November 10, 1941

**PRODUCTION for Victory has unquestioned priority. While this may cause inconvenience, delay and sacrifice in filling civilian orders, we know it has the unqualified endorsement of everyone with whom America comes first.**

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Vital as these are, there are others equally essential which Admiral Blandy did not mention. Among these are the spectrographic and metallographic equipments used in the analysis and quality control of cartridge cases and armor plate, the contour projectors and the tool-makers microscopes for making the fine measurements upon which mass production of tanks and airplanes depends. And to aid in maintaining military and civilian health and efficiency there are microscopes, diagnostic instruments and spectacles.

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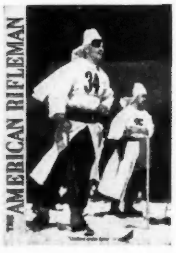
# *The* AMERICAN RIFLEMAN

*Official Journal of The National Rifle Association of America*



**THE COVER**—Civilian coastal patrol is already in operation in some localities. While East coast and West coast alike share our attention, the West coast, threatened first, is the inspiration for our civilian ski guard on the cover. The San Diego area civilian patrol system, one of the typical plans, is described in the article by Raymond Stan on page 5. For northern California, a variation as worked out by the Auburn Rifle club more than a year ago and of which our ski guard on the cover is a part, may well be the answer. Photo by Banbrock studio.

**CIVILIANS UNDER ARMS,** by Colonel Ned M. Green, U. S. Infantry (Retired) and Raymond Stan of the NRA Staff, presents a two-fold program for American shooters in this war crisis. It is directed at citizen training for military or civilian station. Colonel Green can well preach "A Million Men a Month," based on his own experience—Distinguished Marksman, Captain U. S. Infantry team, 1920. Starting out as an enlisted man in the 16th U. S. Infantry, Spanish-American War, he was recommended for the Congressional Medal of Honor for bravery at San Juan Hill; had eight years active service in the Philippines against the savage Moros; served on the Mexican Border and was later recommended for the Distinguished Service certificate in World War I.

**SUPER MACHINE GUN,** by J. B. Nealey, continues our series on American ordnance. An officer in World War I and later associate editor for an internationally known engineering magazine, Mr. Nealey now writes from U. S. Army Ordnance Headquarters as Advisory Specialist.

**HISTORY AND EVOLUTION OF THE CARTRIDGE,** by Charles T. Haven gives us an account of a most important phase of firearms development. Mr. Haven will be remembered as co-author of the monumental "History of the Colt Revolver," and more recently the widely-acclaimed "Automatic Arms."

## NEXT MONTH

**AIRPORT DEFENSE,** the part civilian riflemen can play in event of attack on such strategic spots is a practical discussion which should concern every reader. It is another of Sgt. Joe McCann's contributions to RIFLEMAN pages, and well qualified he is to discuss such defense. More than his pen name indicates, he is dealing with such questions every day as an officer in a U. S. Army Parachute Battalion.

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# Civilians...

## A MILLION MEN A MONTH

### By Col. Ned M. Green, Inf., U. S. A. (Ret.)

THE CIVILIAN RIFLEMEN of the United States under the leadership of the National Rifle Association can produce a million riflemen a month, for use in the armed services, State Guard units, plant protective forces and auxiliary police! The job can be done without asking Uncle Sam for anything except his moral support, plus the practical cooperation of the O. P. M. in making available a reasonable quantity of ammunition. These million-riflemen-a-month will not be outstanding target shots. Most of them will not be able to qualify as experts under the present Army qualification system. Every man of the million will, however, know which end of the gun the bullet comes out of, he will know how to load his rifle, how to get into a sling and how to assume the prone position, and he will be able to hit a man three or four times out of every five shots at 200 yards. Thousands of the men who were sent to France in the last A. E. F. knew none of these things. Thousands of the men who have been called to the Colors under the Selective Service Act in this war and who have served six months to a year still lack the small arms training which the organized civilian riflemen of this country can give to a million men a month.

In this war there should be no such thing as a soldier who doesn't know how to shoot a rifle. Rear areas become combat areas without warning. Artillery, Ordnance, Quartermaster, Signal Corps, all must be prepared to fight with small arms. Despite the general recognition of this fact by our high command, both officers and enlisted men in these branches lack small arms training. They lack the training because they lack ranges, instructors, ammunition and *time*. The members of the National Rifle Association can supply every one of these deficiencies if they are allowed to have a reasonable amount of ammunition.

But to train a million riflemen a month we must discard a lot of our accepted ideas about the training of a rifleman. We must set our sights on the one target, production of shooters able to hit a man three or four shots out of five from the prone position at 200 yards. Later, if there is time, we can make better shots out of these men. Later many of them will want to learn the refinements that will enable them to enjoy skilled target shooting as a sport. Right now, time is the essence of victory. Right now, to save time we must concentrate on *fundamentals*. It is amazing how quickly we can turn out a fairly good marksman who will have confidence in his ability to take care of himself with his rifle when we strip our training of everything but fundamentals. The job can be done in from one to two hours of personalized instruction. This means that one coach can, between 7 P. M. and 11 P. M., teach two men the fundamentals of rifle shooting. In five nights, one coach can teach ten tyros. On the outdoor range, between 7 A. M. and 6 P. M., one coach can teach five tyros. Devoting each Saturday and Sunday to the task, one coach can therefore maintain the production schedule of ten riflemen a week, forty riflemen a month. 25,000 coaches, working on this schedule, will produce a million marksmen a month. There are enrolled in the National Rifle Association at least 50,000 riflemen qualified to give basic instruction, so that if we produce at only half our possible production schedule we can still turn out a million marksmen a month to be fed into the national defense machinery.

How can our rifle training program be boiled down to accomplish the job? Listen! Has it ever occurred to you that the real *fundamentals* of rifle marksmanship are always imparted to the student by a good instructor in the very first instruction period? Everything that follows this first instruction period is in the nature of elaboration and refinement. That may be a startling thought at first, but the more you consider it, the more you will realize it is true. It is the realization of this fact that makes it possible for a good coach to turn out a reasonably good shot on the basis of one carefully planned instruction period.

How are we to go about the task? The answer to that is to ask ourselves what are the fundamentals that we have to teach. They are—

(1) Safety
(2) Essential Nomenclature
(3) Sight Picture
(4) Trigger Release
(5) Use of the Sling
(6) Prone Position

When a man has learned these things, he will have the foundation of rifle marksmanship. He will be able to hit his target often enough to make him a dangerous man to the enemy. He will have good morale, because he will realize that if he does his part his rifle will deliver the goods. The further steps in becoming a better shot will come to him easily when time allows his further training.

Let us take a typical instruction period. Brown reports for instruction. I show him a

(*Continued on page 37*)

# ...under Arms

## A NEW AMERICAN MILITIA

**By Raymond Stan**

DURING THE TWO OR MORE years of home defense effort in this country and three years in England the National Rifle Association has had ample opportunity to study the many methods and proposals for utilizing civilian personnel in the home defense field. It has been able to observe the good and bad alike in organization methods and in the selection and training of personnel.

With such an accumulation of material to work from and with a view toward best utilizing all possible rifle and pistol club equipment and trained personnel, the NRA feels that it is now in a position to announce a practical plan for organizing "Minute Men" of the 1942 type.

For a "Minute Man" organization to be of any practical value, it is of primary importance to determine the particular problem or problems affecting an area. The likelihood of sabotage attempts to defense plants, public utilities, communications and transportation lines and of local disorders or looting must be considered along with the possibility of raids by land, sea or air. Recognizing this, the NRA plans are based on three separate civilian defense problems affecting (1) urban areas, (2) rural areas and (3) industrial plants.

Though it is true that in some cases these three problems overlap, as along the Atlantic and Pacific coasts where there are many large industrial communities within reach of air raiders and where there also are many square miles of thinly populated back country where land raiding parties could operate, they generally remain distinct and require separate authority and command.

Determination of this proper authority to approach with an auxiliary police plan is another important consideration. Under an urban plan where activity would be limited to a particular city or town, the local Chief of Police or town constable would be the logical authority. In a rural community where activity might spread over an entire county, the County Sheriff should be approached.

The following plans show what has been done in two communities—in the urban area of Milford, Connecticut, a town of some 15,000 population, and in the rural area of the County of San Diego, more than 4,000 square miles in the southwest corner of California. These are samples of two plans in action, being substantially the same as N. R. A. plans for organization and training methods. The Association has prepared and has available to interested members, clubs and communities, booklets on the formation of these two civilian defense groups, complete with diagrams on the methods of organization and operation. Another model plan based on the N. R. A. study and dealing with industrial plant auxiliary police organization will be available in a few weeks.

The Milford urban organization, which recently received its baptism in a realistic emergency trial, was set up under the local Superintendent of Police, M. B. Fowler, in cooperation with hard working civilians.

A Coordinator, Ward C. Hunt was appointed by the local Civilian Defense Council to act as commanding officer of the Milford Emergency Police and as liaison officer and advisor between the auxiliary force and the authorities.

Other officers in the auxiliary police were appointed by the Superintendent of Police and all other personnel was approved by him. He also has authority to dismiss any officer or man for cause.

The town was divided into four geographical units coinciding with already existing voting districts. In addition, four other units—American Legion, motorcycle, high-powered rifle and water patrol—were formed. A Captain commands each unit.

Each of the four geographical units was sub-divided into Sectors commanded by a Lieutenant who has under him as many sergeants as the size of his group requires. Each Lieutenant has a designated assembly point in his Sector, conveniently located, equipped with a telephone and where there are usually one or more persons able to take and transmit messages promptly and accurately.

The motorcycle and rifle units report at Police Headquarters where all except the Captains assemble in the Patrolman's Room and await orders. The Captains of these units report to the Coordinator for orders. The Water Patrol reports at conveniently located French's dock on the 15-mile Milford water front. All men, including the Captain, await orders there.

The American Legion unit, experienced in patrol, guard and traffic duty, reports in previously designated groups to pre-arranged locations within the geographical units.

Milford also has adopted a sensible small arms training program for the regular police personnel as well as the auxiliary. No member of the Emergency Police is permitted to carry or use any firearm while on duty without first having received a certificate from the Police Small Arms Instructor showing that he is capable of handling such a firearm in complete safety and that he thoroughly understands the mechanical workings of the gun. Further, no member of the auxiliary is permitted to carry or use any firearms unless specifically instructed to do so by the authorities.

For some time the regular Milford police have been under the instruction of Herb Dingee, prominent local business man and well known in eastern shooting circles. Dingee, in taking on the added duties of auxiliary police instructor, is making certain that neither rifles nor pistols will be used in an emergency by persons not qualified to do so safely.

When the Milford Emergency Police are needed the Coordinator or Police Headquarters will notify all unit Captains, who will notify all Lieutenants, who will notify the Sergeants who, in turn, will notify all men. It has been arranged so that no one man has more than approximately five others to call. This is done according to an ingenious pre-arranged plan with allowances made for the possibility that some member in the chain of calls cannot be reached immediately.

All men report immediately to his Unit or Sector assembly point where Captains await orders from Police Headquarters or from the Coordinator to be carried out or transmitted to the Lieutenants who are awaiting orders in their Sector.

The duties of the Emergency Police are similar to those of a regular police officer, including the guarding of streets and buildings, protection against looting and mob violence and cooperating with fire fighting and maintenance units and air raid wardens. It is important to note that when carrying out orders the Emergency Police are under the command of the Captains and Lieutenants only until the arrival upon the scene of a regular police officer. They then are under the command of that officer.

The rifle unit remains at Police Headquarters and is held in readiness to move quickly to any unusual disturbance. This would include precautions against sabotage, guarding of roads and bridges and prevention of mob violence. The motorcycle unit likewise remains at Headquarters until needed for the purpose of emergency communication or transportation.

The main duties of the American Legion unit are to keep supplies and other official traffic moving swiftly and to keep streets clear of all other traffic.

During the trial, none except essential official cars were used. Auxiliary forces travelled in a group, making it possible for them to arrive at a disturbance and receive orders simultaneously.

Attention to detail in the planning and carrying out of operations proved to be of utmost importance at the trial. From the time of the first alarm to the Captains, only five minutes were required to notify every available man. Positions were promptly taken and contact with units was established. Orders were transmitted to officers to cover imaginary incidents phoned in to Police Headquarters. Here a staff was gathered to receive all reports turned in by air raid wardens, police, spotters and civilians. These reports were turned over to the proper authority, whether the Superintendent of Police, the Coordinator, or Fire Department and Utilities representatives, who issued orders to those under his command.

When a group or unit of Emergency Police arrived at an incident they immediately reported to their commanding officer the particular type and amount of assistance needed. No attempt was made to cover an incident with an entire unit for fear of being left short-handed in case of another disturbance in the same Sector.

Unquestionably the finest example in the country of the rural civilian defense plan is that in operation in the County of San Diego. It is organized under Sheriff Bert Strand, Under Sheriff Henry J. Adams, Jr., and Chief Civil Deputy, Captain C. T. Jamison.

This organization covers the entire county. There are four main roads, two east and two north, of tremendous military importance since there are no possible detours. Each road has one or more vulnerable spots where a small force of men could prevent movement of all traffic for an extended period of time. In addition, the County water supply has its source in seven large artificial lakes in the back country all of which are created by dams. Any of these dams could be blown up with relatively small charges of high explosives and all are located in rough, mountainous country with few roads.

In view of this situation it was felt that the creation of a corps of volunteer Minute Men, armed with good rifles and unusually qualified in their ability to shoot and hunt, could better protect military objectives than any branch of the regular military service.

There is no limitation to the type of rifle for this group, although the .30-'06 has been encouraged. The Minute Men are accepting volunteers with any rifle of similar power provided the owner has at least one hundred rounds of ammunition for the gun.

This organization plan includes Captains, Lieutenants, drivers and privates. An automobile, a driver and four riflemen compose one unit, and the driver is responsible for mobilizing the four riflemen assigned to him. Four such units comprise a squad and four squads a battalion. A battalion is assigned to a particular area within which is located at least one military objective.

The men will be mobilized and directed by the Sheriff's Department, each Captain notifying his Lieutenants, each Lieutenant his drivers, each driver his four riflemen. Operating with each battalion or portion of a battalion is one or more radio equipped automobiles from the Sheriff's Department, making an extremely mobile organization.

There is also a Snipers Corps, membership in which depends entirely upon the individual's ability to travel over rugged country on foot and upon his marksmanship. A number of shotgun shooters also have been taken in because of their hunting ability and usefulness against parachute troops.

For an identification the San Diego group is using a uniform of the coverall type which also offers protection against brush in the back country.

In the interests of speedy and extremely mobile operation, a field car is being equipped, enabling independent movement for an extended period. It will include radio equipment capable of communicating with all automobiles and radio stations in the County and with Army airplanes, one of which has been assigned to work with the Sheriff's office as necessary. This equipment enables the San Diego County Minute Men to direct any number of units and, with the help of aircraft, to concentrate them on any given point from several directions. The whole set up is tied in with the aircraft observation posts throughout the County and thus can get information as soon as the military forces. •

## An Editorial

# THE NAZI DEADLINE

Men who know how to properly handle guns have offered their services by thousands all over America. Why have their proffered services been overlooked while so much interest is taken in registering privately owned guns? Confronted with the question "What are you going to do with these guns after they are registered?" the local Defense Council has no answer. *Someone* suggested the firearms registration as being "a good idea".

The persistence exhibited by some sheriffs and chiefs of police in warning citizens to register their guns "for defense" suggests that the same "someones" who have been regularly defeated in their attempts to secure legislation *legalizing* the registration of firearms are now trying to be smart and to *illegally* frighten people into gun registration under the guise of "civilian defense".

*There is no law requiring the registration of privately owned firearms for civilian defense!*

With the lists of voluntarily registered guns they hope to obtain, these "someones" can go before their legislatures and city councils and present an alarmist's picture of hundreds of guns listed by the "good" citizens and demand registration of the remaining guns. Citizens who have refused to register their guns with the sheriff for "defense" purposes can be pointed out as a dangerous element within the community with some ulterior motive in their failure to register.

The only *practical* use for such "defense" registration lists will be to make available to Fifth Column groups information as to where *they* can acquire additional arms and what homes they should descend on *first* when outbreaks of local violence are called for by the enemy plan!

From Berlin on January 6th the German official radio broadcast—"The German military commander for Belgium and Northern France announced yesterday that the population would be given a last opportunity to surrender firearms without penalty up to January 20th and after that date anyone found in possession of arms would be executed."

So the Nazi invaders set a deadline similar to that announced months ago in Czecho-Slovakia, in Poland, in Norway, in Roumania, in Yugo-Slavia, in Greece.

How often have we read the familiar dispatches "Gestapo agents accompanied by Nazi troopers swooped down on shops and homes and confiscated all privately-owned firearms!"

What an aid and comfort to the invaders and to their Fifth Column cohorts have been the convenient registration lists of privately owned firearms—lists readily available for the copying or stealing at the Town Hall in most European cities.

What a constant worry and danger to the Hun and his Quislings have been the privately owned firearms in the homes of those few citizens who have "neglected" to register their guns!

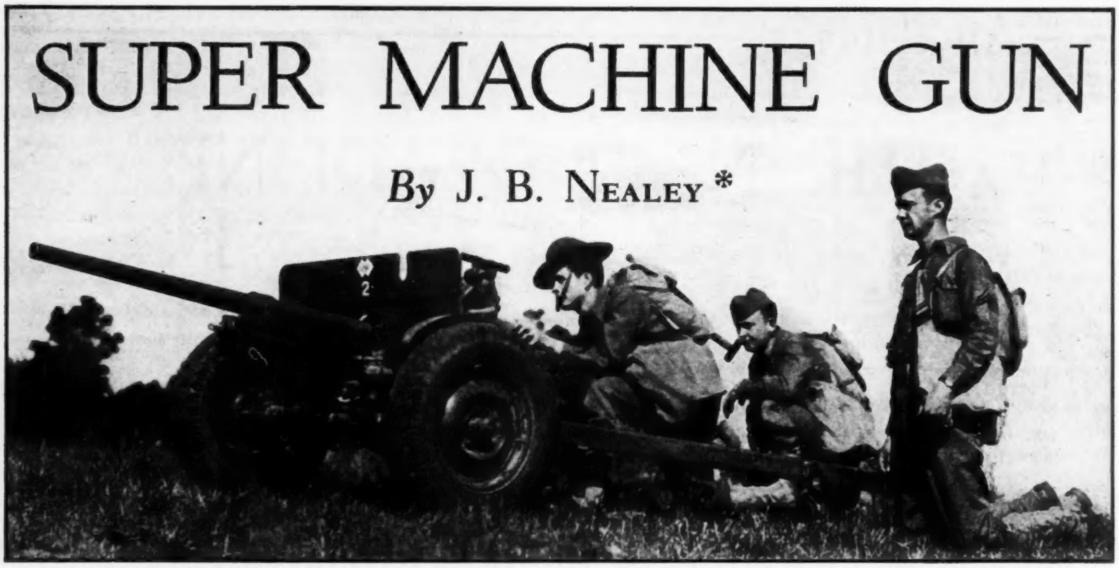
Yet, despite this published record, there are, today, American defense councils trying to compile lists of privately owned firearms in their communities! For what purpose? Surely no defense official is so naive as to believe that in an emergency, with lives hanging in the balance, a gun can be issued to *any* civilian defense worker who happens along! The only person who can be trusted to handle a gun *safely* in an emergency is a person who has learned to subconsciously handle that gun safely through practice when no emergency existed.

No more sincerely patriotic group exists in America than the people composing the Defense Councils—though it must be remembered they have no protection from the enrollment of Fifth Column elements. BUT they are gun-shy amateurs at defense and their well-intentioned activities in *attempting registration of privately owned firearms is the most dangerous blow to national defense that could be taken! Our own Defense Councils are taking the first step to help establish that old-familiar Nazi Deadline—"all guns must be surrendered under penalty of death."*

Sportsmen! Educate your local Defense Councils to utilize the services of trained shooters but to avoid the dangers of firearms registration!—C. B. L.

# SUPER MACHINE GUN

### *By* J. B. NEALEY *



THE FACT THAT NEW WEAPONS are continually being devised necessitates the development of counter weapons if they are to be effectively resisted and overcome. Down through history this ever-recurring cycle is the warp and woof of the pattern of warfare. One of the latest figures in the pattern, woven since World War I, is made up of military planes and anti-aircraft guns. All-important among these latter are light, fast-firing guns that fill the gap between the machine gun and the 75-mm. gun, typified by the famous 37 and 40-mm. guns—in reality super machine guns.

These two guns, which are so close together in caliber and mission, are entirely different in mechanical details, and were developed entirely independently of each other. As soon as the need for anti-aircraft guns was indicated by the introduction of airplane warfare, the Ordnance Department of the U. S. Army started designing, building and testing. Using the Browning machine gun mechanism as a basis, the 37-mm. gun was finally created and adopted. The 40-mm. gun had its inception in Europe and was developed in Sweden, and later was adopted by Great Britain and many European powers. While the relative merits of the two guns are controversial, each has a distinct field of use.

In America the versatility of the 37-mm. gun soon demonstrated itself. Four types of mount were developed and four different missions were assigned to it. In addition to anti-aircraft, it is used for aircraft, anti-tank and tank functions. Actually it is four different guns with the same bore. The 40-mm. gun has only one mission—anti-aircraft, although in an emergency the muzzle can be lowered for anti-tank use.

With a sliding wedge or drop block type of breechblock, actuated by a trip on the recoil mechanism, the 37-mm. gun has been made fully automatic. A slight change only is necessary to convert it into a semi-automatic gun. As an automatic machine gun, its rate of fire is 120 to 140 rounds per minute. Ammunition is fed in 10-round clips and as high as 40 rounds can be fired continuously before cooling with water circulated through the bore.

### Monobloc Gun Tube

The gun tube is of the monobloc type, that is, cast in a single piece with neither hoops nor jackets. Centrifugal casting, a method by which small and medium caliber cannon are cast, together with cold working and stronger alloy steels, are U. S. Ordnance developments of a most revolutionary character. Through these three developments alone the United States today leads the world, not only in the science of gun making but in the mass production methods of gun manufacture. In addition to increased strength due to better steel alloys and centrifugal casting, cold working so raises the elastic limit of the steel in the gun tube as to almost double its strength.

**Firing from clips of ten shells each, this 37-mm. anti-aircraft gun can send a stream of projectiles aloft at a rate of 120 per minute. It is used against planes or tanks**

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* Advisory Specialist, Ordnance Dept., U. S. A.

All this obsoletes the time-honored built-up section of separately forged jackets and hoops shrunk onto the gun tubes, and obsoletes the replaceable liner with its rifling grooves. In its place is this new, light, one-piece tube—the monobloc gun with the rifling cut directly into it. Replacing barrels is faster than relining old ones; therefore, the 37-mm. gun is lighter, stronger, has a higher rate of fire, greater mobility, and will hurl a heavier projectile to greater distances than any other gun of its caliber.

**Left: Another view of the Army's fast-firing 37-mm. anti-aircraft gun. Towed by truck, it can be moved into position and operated with minimum time loss**

The tube is screwed into the breech-ring which contains a recess for the operation of the breech block. A hydro-spring type of recoil system is employed and the recoil piston rod is attached to the breech ring. The recoil system includes the recoil mechanism, the recuperator or counter-recoil mechanism and the buffer mechanism. The tube itself is machined to provide bearings for attachment and alignment on the sleigh.

The gun, which weighs only 6100-pounds, carriage and all, will throw a 1.34-pound high explosive shell for a horizontal range of 9300-yards or vertically as far as 6400-yards. The shells are provided with a very sensitive detonating nose and will explode on contact with the lightest airplane fabric where former shells would pass harmlessly through a wing, fuselage or non-vital part. This new shell, detonating as it does on contact, is very destructive at any point. Furthermore, the detonation is delayed for a fractional part of a second so that the shell will pass into the wing or plane before the actual detonation takes place. The shell will penetrate any armor plate protection the plane may carry. Interspersed with the high explosive are tracer shells so that the gunners can follow the trajectory and ascertain the closeness of their fire by eye. The shell has a separate time fuse which explodes and destroys it in the air after so many seconds flight and after it has passed its effective range. This prevents it from exerting its destructive force on friendly troops or civilians when it drops to earth.

### 37-mm. Anti-Aircraft Carriage

The Ordnance Department also developed an entirely new carriage which gives this anti-aircraft all-round traverse and a high angle of elevation. Equilibrators were added to counterweight the throwing of the center of gravity forward to permit of high elevation. The research section of the Ordnance Department has also developed improved methods of welding that have made possible the substitution of light welded members for the heavy cast parts of the carriage. This makes the carriages much lighter and more stable. With rubber tires and ball bearings these guns can be towed at high speed. Counterbalancing springs permit the lowering of the carriage to the ground, from the traveling position to firing position, in a quarter of a minute.

**Below: One of the first of the new Bofors to come off assembly lines. This 40-mm. gun, developed first in Sweden, is now standard in British, United States armies**

The gun is laid by two independent mechanisms, one for traversing and the other for elevating, operated by two gunners. They sit in light seats suspended from the gun so that their position in relation to the gun and two telescope sights remain unchanged regardless of the movements of the gun itself during firing. A battery of these guns can also be laid and fired automatically by the mechanical computer and the firing data transmission system.

Anticipating a distant airplane traveling at 3, 4 or 5 miles per minute and getting explosive shell up there to meet it is the function of the mechanical computer, a metal box with a couple of hand wheels and telescopes for following the plane in flight. It solves the various firing problems that the battery commander and his detail once solved laboriously by mathematics and slowly phoned to the guns. It solves them instantly and continuously with the element of time added, so that the projectiles arrive at a predetermined point simultaneously with the arrival of the plane.

### The Bofors 40-mm. Gun

The 40-mm. gun was given the acid test by the U. S. Ordnance Department, adopted and put into production last year. While its carriage functions quite like that of the American 37-mm. gun, its construction details are entirely different. Aircraft can be tracked with reflecting sights for "point blank" fire or the director can be used.

The 40-mm. gun has approximately the same rate of fire as the 37-mm. It throws a 2.205-pound high explosive shell. Gun and carriage weigh but 4300-pounds when traveling. A prominent feature of this gun is the bell mouth flash hider on the barrel. The tracer shell, the chief projectile used with this gun, contains a bursting charge, tracer compound, nose fuse and base fuse. Firing the gun lights the base fuse, which ignites the tracer composition about 55-yards from the muzzle. This traces the trajectory as a red point and a burst of several shells gives the trajectory the appearance of a red beam. Thus the gunners can see exactly where the shells are going. The bursting charge is detonated when the super-sensitive nose fuse hits the plane, or, if it misses the target it is detonated when the tracer composition burns out.

### 37-mm. Aircraft Gun

As an aircraft weapon the 37-mm. gun is located in the airplane on a "fixed" mount. To aim it the pilot points his plane at the enemy craft and fires it by remote control. This type is fully automatic. Ammunition is fed in clips loaded into a link belt which is folded into a magazine. There is also a feeder for 5-round clips that fits into the ammunition tray. High explosive shells with a super-sensitive detonating nose and self destructive powers are used.

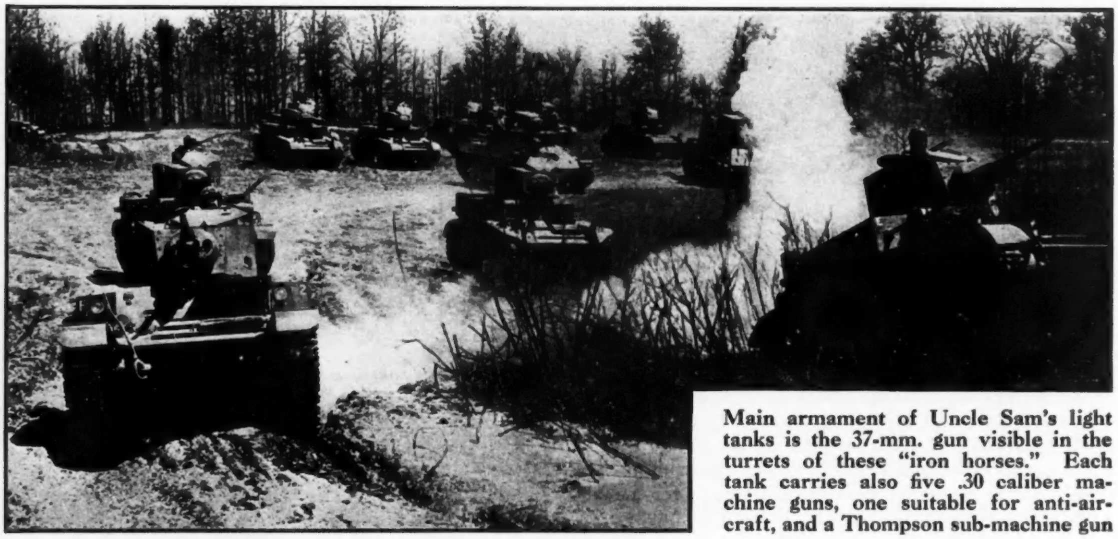
### 37-mm. Anti-Tank Gun

As an anti-tank gun the 37-mm. weapon has a much lighter carriage than the anti-aircraft gun, since high elevation and wide traverse are not necessary for this mission. Pneumatic tires, split trail, frictionless bearings and light welded structure are its most obvious features. The gun weight, carriage and all, is less than 1000-pounds and one man can operate it although its normal crew is six. This is a mobile infantry weapon of great firepower and with a projectile weighing almost 2-pounds, it has a range of around 12,00-yards and a mechanical rate of fire of approximately 25-rounds per minute. The breech mechanism is manually operated. It is normally drawn by a half-ton truck.

As high explosive shell will not penetrate thick armor plate, armor piercing shell are used. While an interior shell burst might accomplish more destruction, the ricocheting of an armor piercing shell around the inside of a tank is quite adequate. Fortunately tank combat ranges are comparatively short. For this and other reasons, direct sighting is employed.

### 37-mm. Tank Gun

Where employed in a tank the 37-mm. gun is of the semi-automatic type, that is, the empty case is ejected automatically during recoil but the breech remains open until a new shell is put into the gun and the breech closed manually. Two men compose the gun crew. This gun has a wide angle of elevation and varying degrees of traverse depending upon whether it is located in the body of the tank or in the turret. Armor piercing and high explosive projectiles are both used. As the targets are slow moving compared with the airplane, and the combat ranges usually short, the direct method of fire is employed. The tank gun installation is so designed as to give the gun 30% more accuracy than similar guns of any other country.



**Main armament of Uncle Sam's light tanks is the 37-mm. gun visible in the turrets of these "iron horses." Each tank carries also five .30 caliber machine guns, one suitable for anti-aircraft, and a Thompson sub-machine gun**

# BARGAIN *or* WHITE ELEPHANT?

### *By* PHIL SHARPE

REMEMBER THOSE "GOOD OLD DAYS" of long ago, back around 1940, when you scraped up the necessary coin of the realm and went into a sporting goods house for a new rifle, revolver or shotgun? Likely as not the clerk dug into the display cabinet and produced several of the various models that interested you. Careful study, a bit of sales talk, and your decision was made. The Model-W just suited you. Happily the clerk emerged from the storeroom with a sealed factory carton. He broke those seals and let you handle the new gun, untouched since it left the factory's shipping department. You liked it; he wrapped it up; you counted out the necessary pieces of eight to complete the transaction.

Those *were* the Good Old Days! The prospective purchaser had but two decisions to make: his choice of a gun—and how to accumulate the necessary funds.

Go into a store today for that new rifle and the clerk will shake his head sadly. If he hasn't one left, he will probably refuse your order. "We've got so many orders for that model that we'll be a year catching up," he tells you with a trace of tears in his eyes. "We ordered 50 last month—they only shipped us five."

For the present, at least, many chaps will have to depend on the used gun market. And there is no better way to get a full dollar's worth than here. *And no better way to get thoroughly trimmed—if you are not careful!*

Here are a few tips in picking a used gun.

First, make certain that the manufacturer is still in business. If he isn't, DON'T BUY THAT GUN! Even minor repairs will be very costly.

Second, get a still popular model. Do not purchase any discontinued type. Regardless of its condition, future repairs will also be costly—if you can get them.

Third, do not purchase even a good gun for an obsolete and rare cartridge. After the current war situation is over, you will see many ammunition makers declare obsolete a great many old cartridges now listed in their catalogs, but which are produced and sold in such small quantities that they are a heavy loss to the maker.

Fourth, do not buy any gun that needs even minor repairs. The seller may tell you that all you need is a firing pin or an extractor or something, and that the factory parts catalog lists it at half-a-buck. *But can they supply it?* If not, you have the headache of getting some gunsmith to make that part by hand at great expense.

Fifth, do not buy any gun that cannot be thoroughly inspected before purchasing.

Sixth, do not buy any gun that shows excessive wear and play in the action. More about this later.

Seventh, do not buy a gun with a barrel that is rough, rusted or pitted inside.

Eighth, do not buy a gun that on the outside very definitely shows signs of abuse. It may be the same on concealed parts.

Ninth, do not let a "sales talk" affect your decision. Make up your mind about a gun on the evidence you *see* on the gun itself.

Tenth, do not buy a gun if the seller will not agree to your trying it out before buying. There may be a very good reason for his reticence—the gun may have some important defects.

There you have ten good commandments to follow in picking a used gun. But let's analyze them, since they are listed as "don'ts" rather than "do's."

Back on Number One: Is the manufacturer still in business? Be sure before you buy. There are thousands of guns around, products of makers no longer on the active list, that would prove poor values, even liabilities to their purchaser. Can you get parts? Repairs? Ammunition? Better steer clear of them altogether.

Suppose you plan to invest $15 in a used gun. Deposit $1 with the seller, get a receipt and a written agreement to hold the gun for you for three weeks. Then check up on the maker, if you aren't sure. Suppose then that you do not buy? You lose $1? Perhaps—but you save $14.

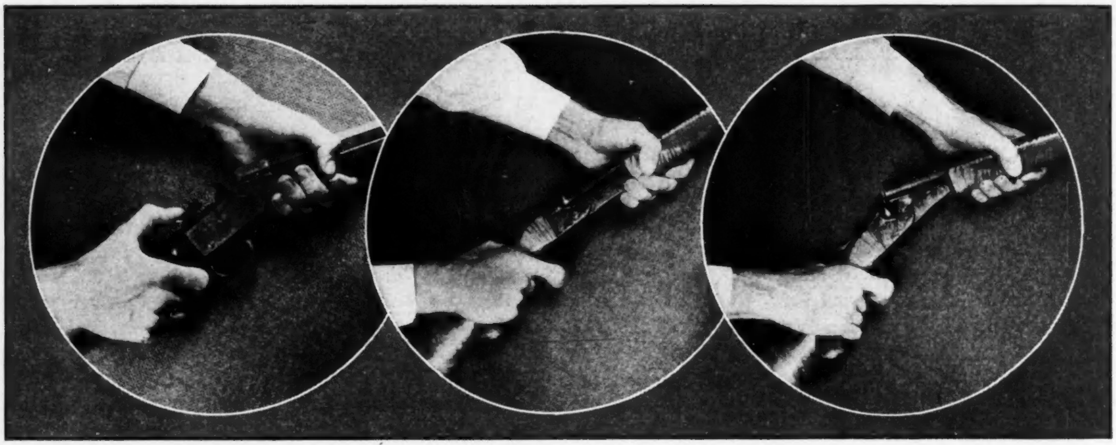
Don't Number Two: A popular model is a gun that in the "Good Old Days" of a couple of years ago, was still made and a good seller. When industrial conditions get back to normal, it will be back on the market. If it was discontinued 10 to 20 or more years ago, do you think that makers will re-manufacture a large supply of parts to store against sales that will probably never be made?

Don't Number Three: This cartridge problem is a headache. Many cartridges for which guns have not been made for many years are definitely on the way out. These include such old favorites as the .25 Remington, .25/35 Winchester, .25/36 Marlin, .25/20 repeater and single shot, 6 m/m U.S.N., 7.65 m/m Mauser, 9 m/m Mauser and Mannlicher, .22 Savage Hi-Power, .30 Springfield Model 1903 (not 1906), .32/40, .33 Winchester, .32 Winchester Self-Loading, .35 Winchester Self-Loading, .351 Winchester Self-Loading, .35 Winchester, .38/55, .38/56, .38/70, .38/72, .40/60, .40/65, .40/70, .40/72, .40/82, .401 Winchester Self-Loading, .405 Winchester, .45/60, .45/70, .45/75, .45/82, .45/85, .45/90, .50/110 Winchester Express and a variety of old and now obsolete military cartridges such as the .43 Spanish, .43 Egyptian, 11 m/m Mauser and the .41 Swiss rim-fire.

In the revolver field—and that includes single shot and automatic pistols, forget the offerings of guns for the entire rim-fire series other than the .22 Long Rifle. In the center-fires pass up the .25 automatic, the .32 Smith & Wesson unless the gun will take the .32 Smith & Wesson Long, the .32 and .380 auto pistols, the .41 Short and Long, the .44 Colt, .44 Webley, .44 Bulldog, .45 Webley, .45 Smith & Wesson, .450 Revolver, .455 Colt and .455 Webley and similar now-rare cartridges.

Don't Number Four: Does the gun need repairs? Look it over carefully. If possible take it to some friend who really knows guns in case you are not familiar with the

**Buying a second-hand firearm is risky business unless you know what to look for. Here are some pointers for the used-gun hunter**



**Don't buy a gun that is no longer made. Parts and ammunition may be all but impossible to get hold of**

**Try a shotgun for worn or loose parts by holding it like this and twisting. Looseness means wear**

**Worn hinge pins may be detected by twisting the gun with the action open. Repairs are expensive!**

model. A small gunsmith may not be able to repair it. The larger gunsmiths are handicapped today with orders they cannot fill, due to making small parts on defense orders or inability to obtain satisfactory raw material. Any modern rifle or revolver usually contains from four to ten different kinds of steel. And remember how much it costs for hand work.

Don't Number Five: This has been covered. Be sure you inspect before you buy.

Don't Number Six: Check the action for wear. The finish may be of little importance to you, but the action may be badly worn. If it is a lever gun, cock and close the action. See if the finger lever has a lot of slack in it when in the closed position. It should have a little, but not too much. With the gun cocked, see if the bolt mechanism—that part that opens to permit the cartridge to ride into the barrel—can be moved back and forth slightly with the fingers. Then lower that hammer and try again. Possibly you have excessive headspace.

"Headspace" is well known to many riflemen and totally misunderstood by others. It is best explained by stating that the only part to worry the shooter is the amount of space between the head of an unfired cartridge and the face of the breech-bolt when the gun is ready to fire. It can be checked with very expensive gauges in sets—hardened steel units that are shaped like the cartridge case without the neck, and ground to dimensions as close as one ten-thousandth of an inch. Yet the testing of your rifle is very simple without the benefit of gauges.

Take an unfired cartridge and unload it. This is easy. Place the neck containing the bullet on a hard flat surface. With a very light hammer tap the neck as you slowly rotate the cartridge with your fingers. In a minute or so the brass case will expand so that the bullet may be picked out with the fingers. Pour out the powder, and you have an unfired case holding only the primer.

Use this case to measure your headspace.

First, you will need a shim to build up the head. Possibly your nearest garage man can supply you with a few small pieces of shim stock—brass—in varying thicknesses ranging from .001 through .0015, .003 and .005. He should give you these in strips about one-half inch square. Cut them into little discs the size of the flat part of the cartridge head.

Another good source of shims is in clean razor blades of the Gillette type. Most standard blades run .006 and the genuine Gillette "Veri-thin" or similar thin blades run .004.

Brass shim stock can be cut to shape with sharp scissors. Steel blades are hard and brittle. Grip a blade in a pair of pliers and with another pair "chip" them to size. It is quite easy.

To check headspace, first remove the cartridge case extractor if you can; if not, leave it in. With the muzzle down, drop the case into the chamber and place your .006-inch shim on the head. Then carefully close the bolt to see if it can be done. Watch the operation to see that the shim does not fall off.

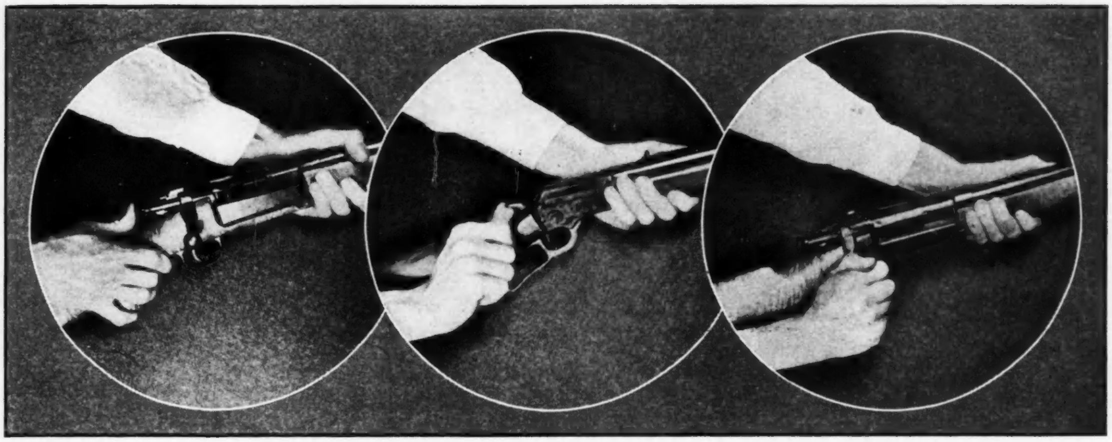
If the bolt closes without undue strain on the .006 shim, add another. If it closes on *two* of them, DON'T BUY THAT GUN! You have a bad case of excessive headspace.

The ideal would be to just barely close on a .003 shim and just about refuse a .004. For a hunting rifle, the .006 would probably be OK—but not two of them.

What does excessive headspace mean? When the cartridge is fired, the case walls cling to the chamber walls tightly for an instant. The rear end of the case stretches as the breech bolt "gives" backward. If it stretches too much, the brass may rupture—the head tear off—spilling gas at tremendous pressure into the action. This will positively wreck the gun—and possibly the shooter at the same time. Correction of headspace is always expensive and today you may find it impossible to get done.

If the headspace is satisfactory, be sure that other parts do not show too much excess play and looseness. Make certain the gun is empty—then check the trigger pull. It should be smooth and crisp. Cock the gun and place it across the knees in a sitting position. Very gently squeeze the trigger. Note any roughness to the pull. If you can feel little "jumps" do not buy that gun unless you have had experience in fixing trigger pulls—which is a very delicate job. Don't get the idea that "you can have a gunsmith touch it up for a half-buck."

Is the trigger pull too hard? It may be crude, and it would not pass official N.R.A. approval, but you can



**Cock the rifle and try to force the striker down. If you can, the gun is dangerous. Don't buy it!**

**This test works with hammer guns too. If the hammer slips off, repairs will be costly. Don't buy!**

**With an empty cartridge in the chamber, check for looseness. The headspace may be at fault**

check the pull roughly with a string and some weights. Tie the string to the center of the trigger. To the other end tie some known weights ranging from three to six pounds. Those weights should rest on the floor beside the gun butt. Be certain the gun is empty, then gently lift the gun by the muzzle, keeping the string on a line with the center of the buttplate. With the action cocked, if you can gently lift six pounds off the floor without tripping the firing mechanism, your pull is over six pounds—and too much. If you can't lift three pounds, it is too light—and very dangerous!

Make another danger check. Cock the mechanism normally, and then with the thumb press hard on the back of the hammer, if a lever gun, or on the firing pin if a bolt action type. If you can force it to let go, the gun is dangerous. Don't buy it. New parts or skilled gunsmithing on the old are definitely necessary. Many such guns are accidentally discharged in the woods when the hammer is struck in passing through brush.

Don't Number Seven: How about barrel condition? Be sure you look through it. If the gun is of the bolt action or takedown lever type, remove the breech mechanism and study the barrel in subdued light from both ends. Never point it at a light—it may fool you. If you check by artificial light, one easy way is to toss a handkerchief or other white cloth on a table near a light. Then look through the barrel at the white cloth. There will be no glare. Or try it on the ceiling *near* an overhead light.

Heavy oil will disguise a rough barrel. It is surprising to see how oil makes a rough bore look smooth. Wipe the oil out before inspection. Those black spots may be bad pits, despite the fact that you think they are only spots of grease left in there.

Suppose that a barrel is rough with tiny pits here and there. Don't decide that you can "scrub them out." Pits are caused by rust. Rust is not a deposit of something—it is a chemical change of steel to iron oxide. When you remove that rust, you remove metal, leaving holes or pockets. Scrubbing with a brush will not put metal back when it is gone.

How much harm will these pits do? In the average rifle used for hunting, very slight pits do not greatly affect the accuracy, particularly in lever action guns. These are not classed with the bolt action target rifle from an accuracy standpoint. For practical hunting, slight pits may not amount to much—at least until you can get the factory to fit a new barrel.

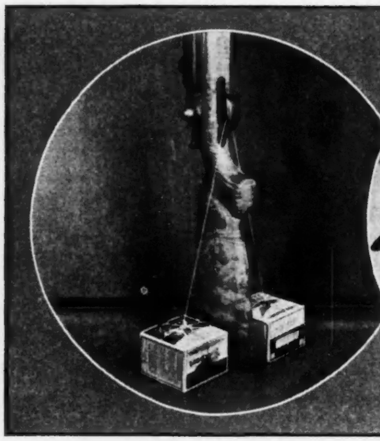
A rough barrel will usually foul rapidly—the rough surface sandpapers off bits of the bullet jacket as it passes through the bore, requiring much scrubbing with brushes and solvents each time the gun is used.

In a shotgun barrel, roughness is of far greater importance. Assume that you have a new and perfect 16-gauge—or any other size. If your barrel is full choke, the best you can expect, according to the manufacturer, is that about 70 per cent of the pellets will strike in a 30-inch circle at 40 yards. If the barrel is Improved Cylinder, you'll get about 50 per cent.

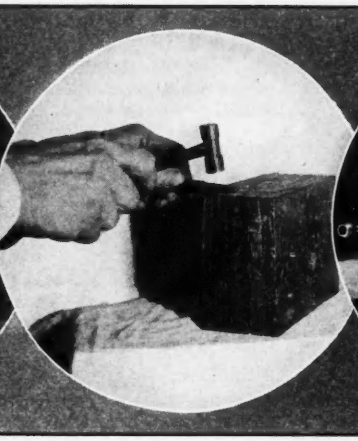
Assume a 16-gauge with a 1-ounce load of No. 6C. That charge will have about 233 pellets. From a full choke barrel the best that you can expect is about 163 pellets inside that 30-inch circle. If the barrel is rough, many pellets contacting the bore are "sandpapered" flat and are wasted—they fly off away from the main charge—or what is worse, they go in the other direction *through* the charge, scattering it badly. A test we conducted in patterning a barrel that had been badly rusted showed patterns ranging from 40 per cent to 60 per cent, but all of them so ragged that there were many spots in the group where a good-size bird could have escaped.

Ammunition ads today talk of "short shot-strings." This is simple—but important. All shot does not arrive at the target at the same time—the charge strings out—sometimes as much as four feet. Rough barrels will change modern short-string ammunition to old long-string types, making the *useful* pattern on a flying bird or running rabbit very ragged and patchy. This means misses or cripples to escape.

Don't buy a shotgun having a Damascus, twist or laminated steel barrel. Such barrels are identified by a form of twisted stripe or curly figure in the barrel metal itself. This figure is not painted on—there are no "imitations" as one chap suggested. These barrels were made by twisting iron and steel rods together, heating and hand-forging them together. The figure depends on the way the wires were twisted. When they were finished, the browning



**Trigger weights are easily improvised. Trigger should hold three pounds; six pounds is too much**



**To check headspace, use an unfired case. Bullet may be removed by tapping edge of case lightly on block**

**If you can beg or borrow a set of gauges from a friendly gunsmith, checking headspace is easily done**

acid acted heavily on the soft iron and lightly on the steel. They are beautiful to look at, but regardless of condition are definitely unsafe with any modern ammunition sold today. Read the warning label on all shell boxes, and steer clear of such barrels.

Don't Number Eight: Do not buy a gun that shows abuse on the outside. It has received rough service, and has been mistreated. I own a scope-sighted Springfield sporter that cost me something like $200. It was bought in 1929 and rebuilt in 1931. It has traveled and hunted in eight states, practically every year. At least 1500 cartridges have been put through it. The beautiful stock is nicely finished. Yet one hunter, a couple of years ago, showed me a new Model 71 Winchester he had used only two seasons of one week each in the woods. His gun was a wreck—outside and in. When he saw my gun he remarked:

"A beautiful gun, but I'd never dare take such a gun into the woods." Why not? My gun was built to take into the woods—not sit in a cabinet. The finish of the trigger guard, magazine floorplate and receiver show very slight wear from much carrying. The rest of the gun is perfect, inside and out. There are not battle scars to brag about. It has never been tossed off a cliff. So why not pick a *used* gun that has not been abused?

Rifle barrels are thick, but they can be damaged. If you see a bulge on the inside, you can assume that a slight obstruction—possibly a bit of oil or grease, was in the barrel when it was fired. Don't buy that gun. Your cartridge develops from 40,000 to 50,000 pounds per square inch pressure to drive the bullet through the barrel. When the bullet strikes that bulge or free spot, it upsets from this pressure to fill the pocket. Then as it continues, it is forced back to normal size and this checks the forward movement momentarily, often building up pressures dangerously. Sooner or later the gun may blow up. And equally to the point—it is doubtful if the mutilated bullet will have any accuracy.

Shotgun barrels are thin—and thus easily dented. I've only dented one, and did it in my home when I dropped it on the floor, striking a hardwood box. The dent was slight but I sent it in to the factory for removal.

Never buy a shotgun that has had its barrel or barrels "cut down." This may work with a rifle—but shotguns have their choke built into the last one to 2½ inches near the muzzle. Cut them down and you remove the choke and spoil the barrel. A reasonable choke cannot be replaced, even by a good gunsmith or the manufacturer. New barrels are the only cure. Is it worth it?

Don't Number Nine: Many used guns are sold for legitimate reasons. Many others are sold merely because they have outlived their usefulness as a gun. A shotgun may be sold because the owner does not think that the stock fits him. Or he may sell a double because he has decided that he prefers a pump or automatic. Or possibly a lighter or heavier gun. Or a different gauge. Thus you may get a good buy.

Perhaps the gun just naturally does not suit the original owner—but may be what you are looking for.

Don't Number Ten: The final and one of the most important—if you can get that gun on approval, study it. Check it carefully. Clean it. See that the action is not filled with dirt and gummy oil. A bit of gasoline and a few pipe cleaners will help you get its action dirt free. A pair of scissors to trim the soiled end of the pipe cleaner will give you long mileage.

Inspect the sights carefully to see if they are bent, worn, or otherwise injured. Will you have to spend a lot of money on new sights? Check up on this point. Finally buy a box of cartridges and take the gun out of town for a trial. You do not need a 100 or 200-yard range. Fifty yards with a safe backstop will teach you how it works. If you can't hit a small target at that range, see if the sights are off. If they can be adjusted, try it—if not—well, you've got to spend more money if you buy the gun. Shooting it may bring out a lot of other defects that may show you that you are not getting a bargain.

And finally the price. What should you pay for a *good* used gun? A difficult question to answer, but if the gun is in *new* condition, a current model, 75 per cent of its original price is enough. If it shows signs of service but is in fair condition, half of the original price is enough. And if it is in tough or poor condition, needing major or minor repairs, it may, in these times, be a poor buy *at any price*.

Remember this: The gun you are considering is certainly not the only one of its kind on the market. If it isn't in proper condition, pass it up—and keep looking.

# REBEDDING THE SINGLE-SHOTS

## *By* A. H. BARR

ALMOST ANY RIFLE MADE for as inherently accurate a cartridge as the .22 Hornet, 2-R Lovell, .22 Varminter or .220 Swift will give near minute-of-angle accuracy with at least one, and sometimes several, combinations of powder and bullets. Usually this kind of accuracy is sufficient for any purpose, but it does not always reveal the greatest possibilities of these popular calibers. We frequently hear of a wonderfully accurate and effective combination which, when tried in another rifle of the same caliber, may be quite disappointing. This raises the question of why a given load will work so well in one rifle and not in another, and what may be done about it.

Stock bedding in itself is a specialized art, and the first or second attempt to do a first class job is usually disappointing. For the novice the Plastic Wood application to a semi-finished job is the safest and surest recourse. This method is generally recommended for one-piece bolt-action stocks as described in the September 1941 *American Rifleman* by Bert Popowski. In addition, definitely improved results in accuracy and constant zero have been obtained by similar applications to two-piece stocks.

All wood contains some moisture content which naturally changes with atmospheric conditions. The effects of a partially seasoned forearm on one particular Sharps-Borchardt 2-R Lovell were an occasional zero change not traceable to the scope, the mount or any carefully selected load. Normally this is one of our most accurate rifles but when there was an impact change the groups would be somewhat larger than normal.

The Plastic Wood treatment of enlarging the barrel groove by forming three or four 1-inch barrel contact bands of Plastic Wood was tried. The first band was placed near the receiver, another 6 inches farther forward and the remaining two on either side of the adjustable barrel band. The first job had a split band designed to be securely fastened to the barrel as it alone was the means of holding the forearm in place. Later, a thin home-made sliding band with bottom lug drawn tight by a forearm screw was found to be as satisfactory, providing a second screw was placed near the receiver to prevent the forearm moving forward from recoil.

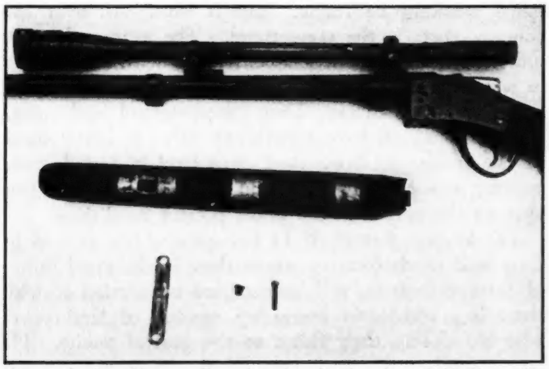
In the experiments which followed we soon discovered that forearm screw adjustment controlled group dispersion and center of impact in relation to point of aim. The odd part was that the best loads would shoot even closer than normally with one adjustment, but spread out to twice the normal size with another adjustment. Some loads and bullets which were not at all satisfactory before would now make minute-of-angle groups, and they all maintained a constant zero.

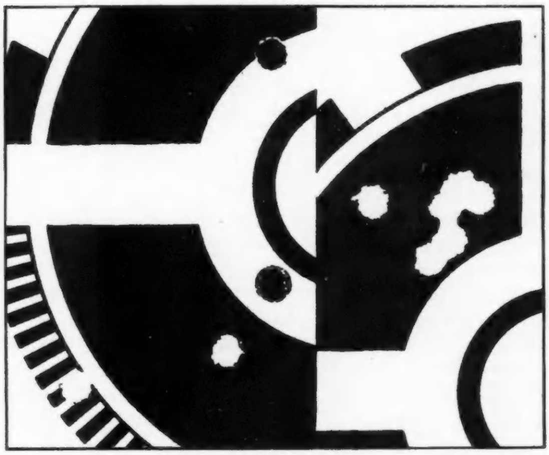
The final result after several trials were that we found our favorite load making less than 1¼-inch 200 yard groups on two consecutive occasions.

These encouraging experiments were to be considered for the second 2-R with a similar relined medium-weight barrel. This rifle was chosen in a direct attempt to duplicate performance of the first 2-R, using the same components. In other words, we hoped to make this new rifle perform with a specified powder charge and bullet. Preliminary shooting was done without the Plastic Wood bands to establish a basis for comparison. The first groups were temporarily disappointing, but merely inserting narrow strips of cardboard in the barrel groove to simulate the Plastic Wood made a great difference. Immediately the same loads grouped into less than ¾-inch at 100 yard, by two shooters.

Our reward was another surprisingly accurate Lovell adapted to a given load—not a given load adapted to our rifle! In both cases the charge was a case full, not weighed or measured, with 55-grain Sisk Niedner or W-M 8-S bullets. Gratifying also was the constant and uniform center of impact with all loads tried. Again the group impact could be controlled by adjusting the forearm screw.

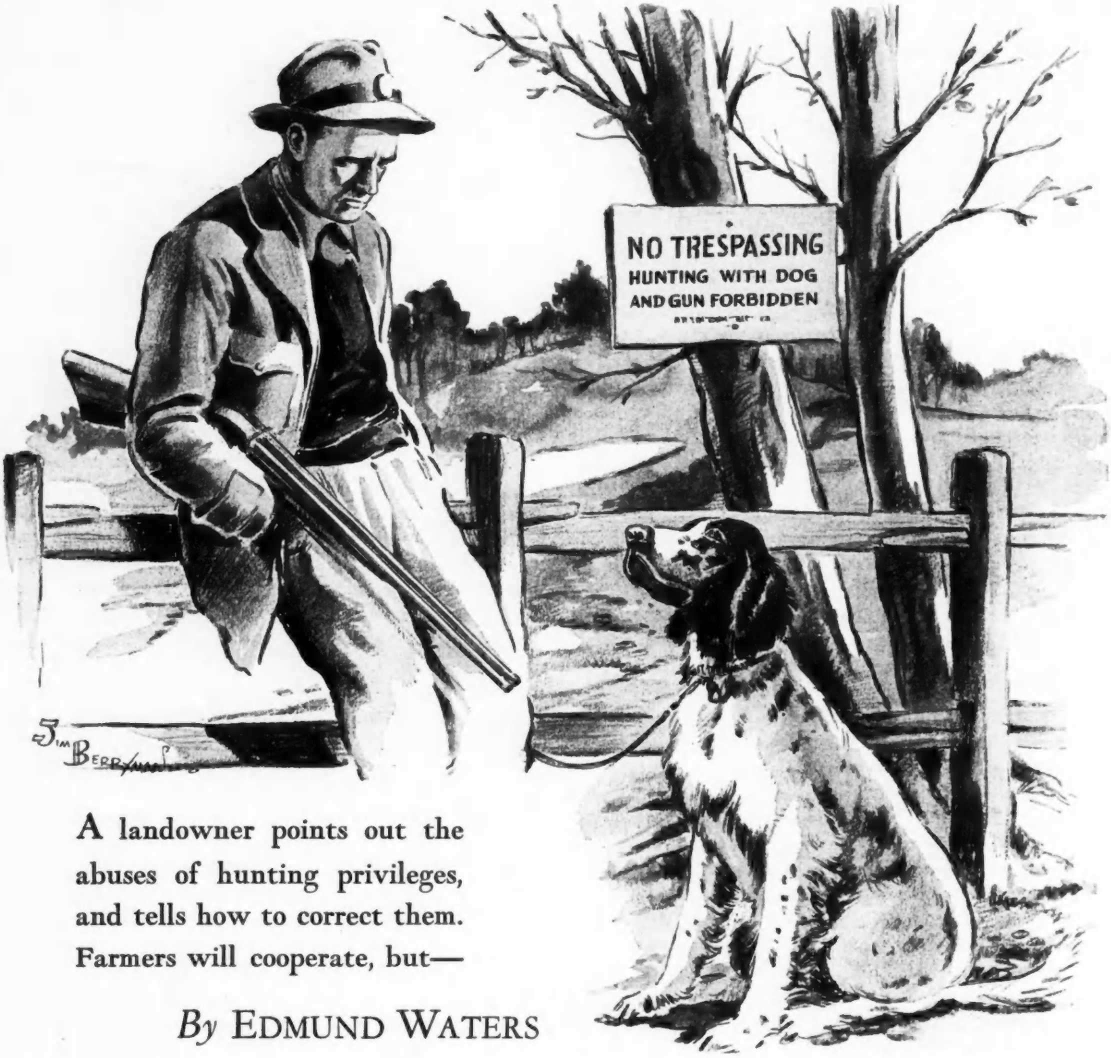
These experiments are by no means new, though seldom applied to the two-piece stock. Our findings showed us, though, that light to medium weight barrels show the same kind of accuracy and relative impact usually expected of the heavy-barreled bolt-action target rifle. Even the heavy ones are many times notably improved. With barrels getting scarce, it would seem wise to explore the possibilities of those which have apparently lost some of their accuracy. It may not be the barrel's fault at all!





**One of the Sharps-Borchardt single shot 2-R Lovells with Plastic Wood bands in place. On the right are two targets, fired at 100 yards with the same rifle and load, one before and the other after rebedding**

# IS FREE HUNTING DOOMED?



**A landowner points out the abuses of hunting privileges, and tells how to correct them. Farmers will cooperate, but—**

### *By* EDMUND WATERS

FREE HUNTING IN AMERICA is a tradition, and like all customs which are firmly rooted, is slow to change. In time we begin to take the tradition for granted. But nothing can be taken for granted. If there isn't a constant determination on our part to keep what we have, it is slowly lost to us—whether it is liberty, land, or hunting privilege.

I have just witnessed the closing of three thousand acres of land to hunting, good deer and quail cover which the average hunter has used for years. This land is so situated that it effectively closes several times the actual area. Lying in the foothills, it controls the means of getting in and out of the mountainous section back of these ranches. There will be no more hunting parties leaving for the mountains with high expectations, no more friendly campfires along the lonely creeks. Those things are lost to the average hunter, and it was all so needless. It could have been prevented with a little cooperation between the land owners and the sportsmen.

If this were an isolated instance, the closing of the range wouldn't be tragic. But it isn't. All over the country there is the same trend. The average hunter, unless he is a landowner, is confronted with a condition in which he is beginning to wonder whether it is worth while to own firearms. Deer cover, upland bird cover, duck marshes, all have collectively felt the heavy hand of the trespassing law. And once land is posted, once hunting is forbidden, such land is seldom again thrown open to the general public under present conditions.

The average hunter, if he has spent a few seasons in farm and ranch country where there is the usual influx of autumn hunters, will have a good conception of why there is a constantly increasing number of landowners who are closing their farms to the general public. He will marvel at times at some of the liberties the small minority of gunners take with the hospitality of the farmer. He will marvel but do nothing about it; in fact he is often at a loss to know just what to do. He knows this small minority is the cause of most of his trouble, that this small criminally-inclined element is the reason farms are closed to him.

This fall during the pheasant season, I spent several days in the valleys where general farming is the practice. While they had different hunting conditions, the problem of trespassing and general disturbance by the small minority was the same as it is in my own section. Some of the land on which I hunted had been posted for years, other farms were only recently posted. Collectively the farmers were of the opinion that it was impossible to allow general hunting until such times as the sportsmen took a more active interest in seeing that property rights were not abused by the criminally-inclined element.

They are not bitter about their experiences, but certainly had every right to be. One farmer, who had paid four hundred dollars for a pure-bred bull, had the animal shot for a pheasant! There was no effort made on the part of the hunter to make good this loss. After the shooting the hunter left without a word. Of course the animal should not have been in the standing unharvested corn, and wouldn't have been if another hunter had not left the gate open in the field where the bull was turned for his daily exercise.

In order to kill an animal of this size with a shotgun loaded with number six shot, the hunter had to be very close, considerably less than twenty feet. If at this distance he mistook the head of a jersey bull for a Chinese pheasant, or if in his excitement he shot at the rustling made by the animal in the corn field, does it seem unreasonable on the part of the farmer to post his fields? Surely no one would want such a Dead-Eye Dick roaming his farm, even though there are hundreds of innocent and fair-minded sportsmen who must suffer for the criminal negligence of this one spoilsport.

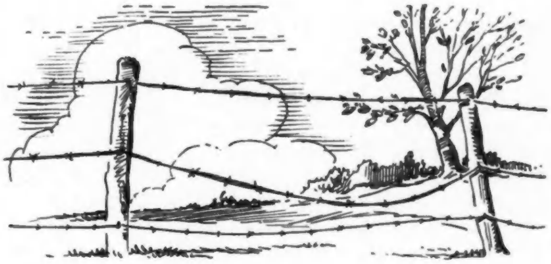
Where, you may ask, does the innocent sportsman enter the picture in this instance? Just how could he have prevented this? Frankly he couldn't but he could have helped the farmer to identify and prosecute the individual responsible for the damage. There were several hunters on the farm at the time, most of them were careful to keep gates closed, not to shoot in the direction of the farm buildings, and in short to conduct themselves as guests should. This passive attitude, while it is commendable in a way, must be replaced by a more militant one if free hunting is to survive. Among those hunters there were three men who could have positively identified the man who did the mischief. They didn't and lost a wonderful pheasant cover. They lost it not only for themselves, but for all the sportsmen who may come that way.

Neighboring farmers, hearing of this landowner's experience, are going to act before a similar one may befall them. Thus we have a vicious circle. It would be edifying to know just how much land was closed to general hunting by this one criminally-stupid act.

All land, of course, is not closed for some act as tragically stupid as this. Often an open gate will in time mean a closed farm. Especially is this true if the gate opens on a highway. In most states the farmer is responsible for any loose stock on public roads. If a motorist should happen to hit a cow and wreck his car, then the owner is responsible for the damage. Such a case came to my notice recently. An automobile collided with a cow on the highway. The owner of the cow paid a hundred dollar repair bill, and was out the loss of his livestock. The inevitable result followed—the land was posted.

Another good method of getting land posted is to stand on the bottom wire of a fence and pull the middle wire up so a hunting partner will be able to get through. That invariably brings the trespass signs up as well as the wire. By doing this the entire fence is slackened, and soon the cattle will find little difficulty in getting through. To repair the fence the farmer will have to remove the staples from the posts and restretch the wire. This is a job, as any farmer will tell you, which makes any other ranch occupation seem easy by comparison.

In the same class is the climbing of woven wire fences. Such fences are usually built to turn the smaller animals, hogs, sheep or calves. The least slackening of the woven wire and it is no longer effective. Then the farmer not only has an intricate job of fence repairing on his hands, he has the problem of rounding up his small stock. In the busy autumn harvest season when moments are precious, when the farmer is working against time to get his crop in before the fall rains, this pausing to repair fences and hunt for strayed stock is not conducive to sunny dispositions.



It is much simpler for him to post his land than to do missionary work among the hunters, teaching them out of his limited time the purpose of gates and fences. While it may be inconvenient to walk to the corner of a field and climb over where the posts are braced, or to leave the field by a gate, carefully closing it afterwards, it pays dividends in the long run. Those are the methods a farmer uses to enter or leave a field, and if he observes a hunter using the same methods, that sportsman will be invited back to hunt again.

The leaving of gates open, the slackening of wires on fences by improperly getting over them can be classed as sins of omission or ignorance, and the sportsman can go a long way towards correcting these evils by pointing them out to the less considerate hunter.

I have found it a good rule to close any gate which is open, when I am hunting private property. One will make mistakes at times and close gates which are open for a purpose, but where there are standing unharvested crops and cattle on a farm, it is better to be on the safe side and close all gates. If one makes a mistake there is no harm done, and the farmer will appreciate the forethought in trying to help him keep his place in order during the hunting season. Such courtesy is not wasted. It helps keep the trespass signs at a minimum.

Once while hunting deer on the range of a rancher south of my place, I found the fence cut. Making temporary repairs with some small poles cut for the purpose, I went out of my way to leave a note on the door of one of the line shacks. I told where the fence was cut, how many cattle had passed through, from the tracks, and what repairs I had made. When I returned that way five days later there was a note of thanks tacked to the fence where I had made the repairs and an invitation to stop at the ranch house on my way out of the hills. My little act of range courtesy made me acquainted with a fine old gentleman, and we have spent many pleasant days hunting together since then.

While I often marvel at the patience of the farmer with some of the gunners who hunt on their land, at the same time I marvel at the patience of the average sportsman who allows the small inconsiderate element to spoil his hunting. The basic problem cannot be solved by the landowner alone. I doubt if he takes any more pleasure in posting the land than the average sportsman has in finding the land posted. A mutual effort on the part of the sportsman and the landowner will go a long way toward making it decidedly unpopular for the outlaw hunter to operate. And the sooner this element is driven from the field the better it will be for all concerned.

While we may classify much of the destruction of property as ignorance, there *are* depredations which are willful. During the autumn hunting of deer there are those who come with the intention of obtaining meat. Disguised as deer hunters, they are more concerned with the farmers' livestock than they are with venison.

Such a gang forced the ranchers to close three thousand acres of good deer cover in this section. The ranchers lost several head of stock each season. The free hunting was costing them too much; they had to close their land to hunting. Most of the sportsmen hunting this section were careful with their firearms. There was no objection to them hunting. They were typical of the average American gunner everywhere. Hunting the same cover each year was that small minority which had no consideration for anything or anybody. They killed livestock, were careless with rifles, left campfires smouldering on the ranges. The patience of the farmers and ranchers became exhausted under this treatment.

As they saw it, there was no alternative for them except to close the entire range to hunting. A little initiative on the part of the lawful sportsman would have saved this hunting. If he had reported these violations when they came to his notice, had cooperated to the full with the game law-enforcement agency and the ranchers, the land would never have been posted. In cooperating and taking this responsibility, the sportsman is going to become unpopular with the criminally-inclined element; still their hatred is more desirable than their friendship.

I have had considerable trouble with the lawless element on my own ranch. They forced me to take action. Wanting to let this group feel the consequences of their lawless actions without making the majority suffer, I worked out a plan which has served me wonderfully. At the same time it has served the sportsmen. I no longer allow hunting without permission. Each time anyone wants to hunt he must inquire at the house. The fact that there is no hunting except by permission has served to turn away most of the lawless element.

When a hunter inquires about hunting he gets his instructions. The instructions are quite simple. He is to report all game law violations, and to act as if he owned the property during the hunt. When he sees any violations of property rights he acts for me.

The results are more than gratifying. When two or three honest sportsmen realize it is up to them, when they are each personally responsible for the kind of hunting they get, there is little game law violation going to take place on their hunting grounds. These small parties, coming and going during the hunting season, keep the place well covered. They are going to see that no lawless hunter is going to take their hunting away by either shooting protected does and fawns or by violating the property rights of the ranch. They are my agents, and when they give some stumble-bum an invitation to make himself scarce, the stumble-bum does, hurriedly.

If such a plan had been worked out by the ranchers who closed the three thousand acres of deer cover, everyone would have been better served. There hasn't been the slightest destruction of property and no one has been turned away unless he has violated the ranch's hospitality while hunting. I am not saying this plan will work everywhere, but I think that in most cases it will. I only wish all farmers who have a trespass problem would try it. They probably will be surprised at the efficient manner in which the average gunner can police his property.

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## MARKSMEN IN THE DRAFT

"Few of the draft, it is estimated, already have their training in marksmanship which every one will need. The N.R.A. has, of course, been training men for many years . . . but few of these shots are to be found in the ranks of the draft, since most expert riflemen have already identified themselves with some branch of the service before the draft came. Their presence in the army can only emphasize the necessity of making use of their peculiar attainments in not only sustaining the rifle-shooting traditions of the nation, but in equipping every man selected in the draft to do his best for the cause of democracy."—*From* THE AMERICAN RIFLEMAN, *September 1, 1917.*

# THE CARTRIDGE . . .

## *Its History and Evolution*

### PART I

*By* Charles T. Haven

The latest edition of Mr. Webster's well-known work defines a cartridge thusly: "A case, capsule, shell or bag of metal, pasteboard or other material, holding a complete charge for a firearm. From the Latin 'carta' (paper) through the French 'cartouche'."

We have then, from the very name, the indication that cartridges were not always what they are today. They were originally made of paper, and since then of "other materials" which have included some weird and wondrous substances, among them tinfoil, goldbeater's skin, iron and rubber. They have been loaded into muzzle-loaders, backward and forward into breech-loaders, and even with the ball behind the powder charge. Out of some hundreds of years of trial and error has developed the solid-head rimless self-exploding metallic cartridge, loaded with smokeless powder, non-corrosive primer and jacketed bullet that we know today.

The earliest form of cartridge was a simple unit formed by wrapping a round ball and a charge of black powder in a roll of paper. The ends of the roll were held in place by tying or twisting them and the whole was rendered more or less waterproof by coating with grease.

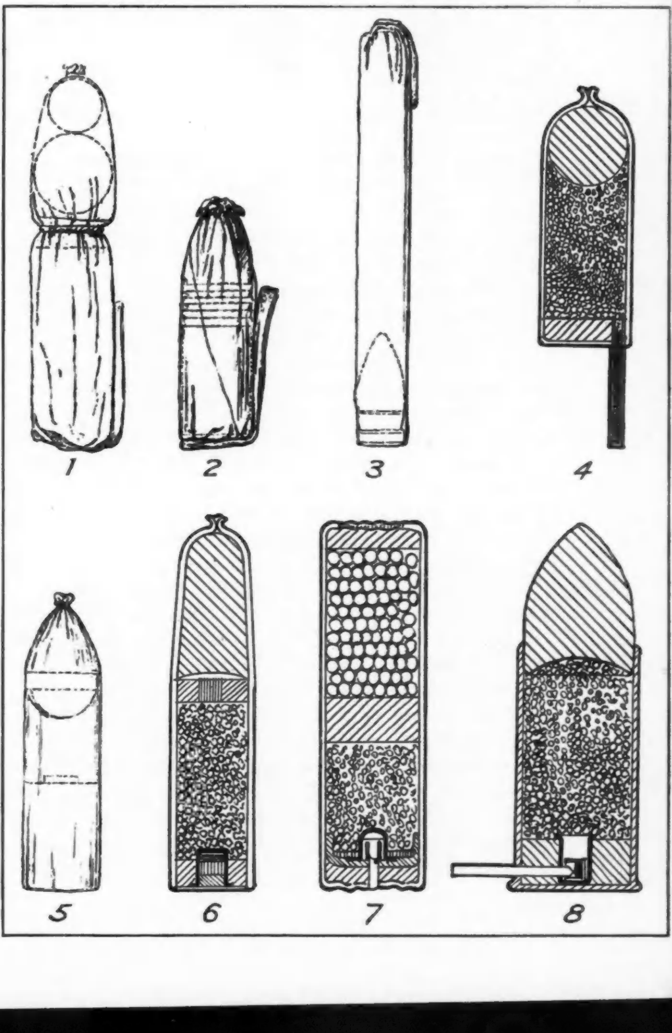
This type of cartridge, of which a number of specimens are shown in the accompanying illustrations, came into use in Europe in the last quarter of the 16th century and remained the standard load for most military muskets until the third quarter of the 19th century when the metallic cartridge came into its own.

Another term still in use had its inception at about the same time and applied also to small arms ammunition. This was "bandolier." During the late 16th and 17th centuries, bandoliers were belts or baldrics from which were hung small wooden or metal boxes containing measured charges of powder. The musketeer carried also a bag of bullets, a priming-powder flask and a length of lighted match. In loading he poured in a charge of powder from one of the bandoliers, rammed home a bullet and its wadding, primed from his flask and applied the burning match that he carried to a short piece held in the jaws of the cock of his musket. He was then ready to fire. The bandoliers were, however, a great nuisance for several reasons. They were always rattling against one another and tangling their cords, they were apt to be damp in wet weather, and worst of all, hanging as they did near the place where the priming flashed, they were very likely to take fire and blow up in the user's face. For these reasons they had largely disappeared before the end of the seventeenth century.

The paper container, however, was practical enough to remain in use as long as muzzle-loading arms were carried, and even to be experimented with considerably in the manufacture of cartridges for breech-loaders before the metallic cartridge came into general use.

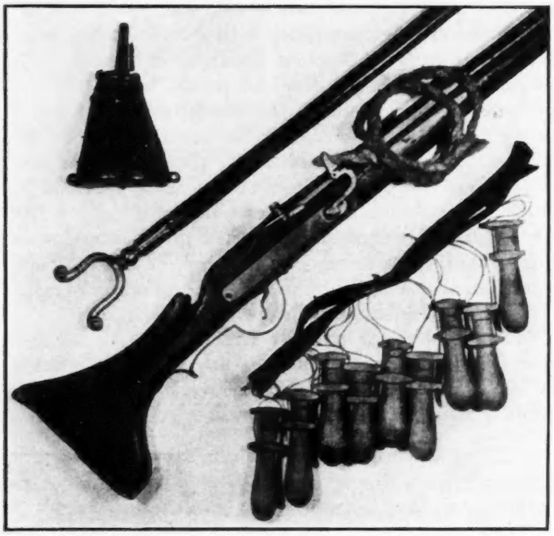
The use of paper cartridges with muzzle-loading arms varied but little in different countries or periods. The soldier took a cartridge from his pouch, bit off the end opposite the bullet, poured the powder down the barrel and rammed the paper and bullet down on top of the powder. The practice of biting off the ends of the cartridges was one of the causes of the Sepoy rebellion in British India during the middle of the 19th century. As the English cartridges were reported to be greased with hogs' fat, the native troops construed the order to bite into them as an attempt by the English authorities to make them perform an act forbidden by their religion.

It is probable that the first attempt to make the cartridge a real unit, containing its own means of ignition as well as powder and ball, was the work of M. Pauly, or Pauli, a Swiss from Geneva who had a gun shop in Paris



**Some early cartridges: 1—an early paper-wrapped ball cartridge; 2—conical bullet load, model of 1858 musket; 3—.43 Swiss cartridge, circa 1856; 4—Demondion cartridge with tube detonator; 5—Dreyse needle-gun cartridge; 6—French Chassepot; 7—Needham; 8—Pinfire, combining Lefaucheux, Houillier inventions**

during the early 19th century. In 1812 he brought out a breech-loading gun chambered for a cartridge made on an entirely new principle. The charge was contained in a tube of paper, treated so as to be consumed by the flame of the discharge. This tube was fitted into a hand-made brass "rosette," which was very similar to the brass head of a modern shotgun shell. The rosette had a hole in its center and a thick wad inside it. A pellet of detonating compound, recently invented by the Reverend Forsyth, was placed in the central hole and the complete cartridge loaded into the breech of the gun, to be discharged by the blow of a striker on the primer. The combination made a center-fire, self-exploding cartridge with a head that could be used over and over again by merely replacing the priming pellet and inserting fresh paper-wrapped charges.



**Equipment of a musketeer of the Thirty Years' War. These examples, from the National Rifle Association Museum, include a matchlock musket, powder flask, a bandolier and length of match-cord and musket rest**

Another early type of self-exploding cartridge was the invention of M. Demondion, patented in France in 1831. His gun was loaded at the breech with a self-consuming paper cartridge which had a tube of detonating compound protruding from the rear of the case. The breech-block shut down from the top and the hammer struck up from below to crush the detonator against it.

A German workman in Pauly's shop, one Johann Nicholas von Dreyse, went back to Germany and there patented a cartridge shortly before 1830 that was the forerunner of a series of attempts at making a satisfactory self-exploding unit. Its first use was in muzzle-loading arms, but in 1838 it was adapted to a breech-loading arm known for many years as the "Needle Gun." The principle involved in Dreyse's cartridge was the placing of a disc of priming compound in a wad at the base of the bullet and wrapping the bullet and powder charge in a container of paper intended to be consumed by the discharge. This cartridge was used in a bolt action breech-loader and fired by a straight drive pin or "needle" that passed through the powder charge and struck the primer at the base of the bullet. A similar cartridge was patented in England in 1831 by A. Moser.

The needle gun was of great assistance to the Germans in the war with Austria in 1866, and the French also adopted the type. Theirs embodied a number of improvements which included placing the primer in a wad at the base of the cartridge. Used under the name "Chassepot," this French version of the needle gun was also a bolt action breech-loader, and had a better type gas stopper at the breech, made on the de Bange system, and was of .43 caliber instead of the .66 of the Prussian arm. These two arms were used in the Franco-Prussian War in 1870, and although the French system was the better of the two, for various other reasons, the worst gun won.

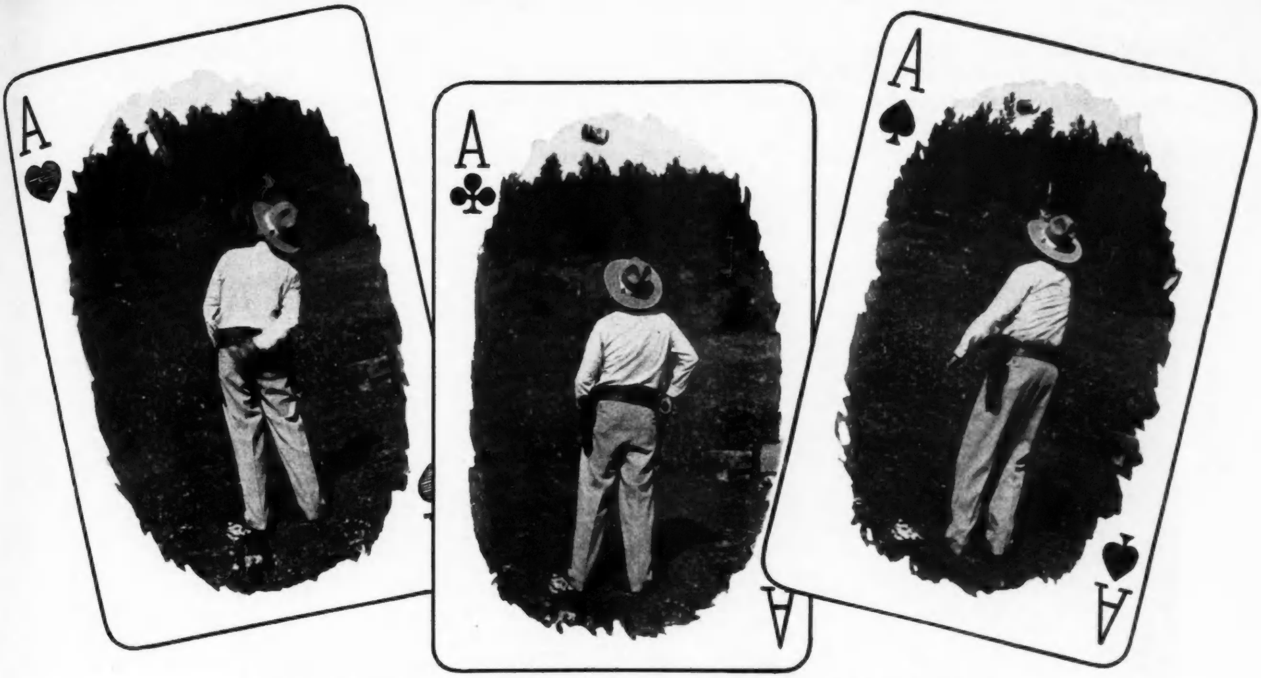
An English version of the needle gun was in use during the 1850's, mostly as a shotgun for sporting purposes. This arm was the invention of a Mr. Needham, and consisted of a breech-loader opening out to the side by drawing back the breech blocks and then swinging them out on the pins that held them at the rear ends. The cartridges were similar to the Chassepot cartridges, with their primers in the base, except that the base included a zinc disc against which the primer was driven for surer ignition. The cartridges were self-consuming with the exception of the base, which was pushed forward by the insertion of the next cartridge to form its top wad.

There is some difference of opinion among writers, both early and recent, as to the invention of the pin-fire cartridge. The most generally accepted version seems to be that the type of ignition, a percussion cap contained in a wad at the base of a cartridge, which was fired by the impact of the hammer on a pin resting against the cap, and projecting from the side of the case head instead of its center, was the invention of M. Lefaucheux of Paris about 1836. The cartridges of M. Lefaucheux were similar in general to modern shotgun cartridges, with heads of brass and cases of cardboard. Lefaucheux guns broke downwards to load more or less like the present day shotguns. The cartridges were rimless or nearly so, and were extracted by hand, using the pin to pull them out.

Another French gunsmith, M. Houiller, took out a series of patents in 1847 for a number of types of cartridge ignition, including a pin-fire system differing from that of Lefaucheux only in the position of the cap in relation to the pin. He patented also a rim-fire system similar to the one used at present, and one of the early types of central-fire outside primer cartridges.

His greatest contribution to cartridge progress, however, was the stipulation that these ignition systems should be used in cartridges consisting of a full length case of thin copper or brass which would contain the powder charge and enclose the base of the bullet. Here at last was the ideal combination. The copper case expanded to form a gas seal at the time of discharge, and returned to its original size to make extraction easy. It formed a convenient, safe unit, adaptable to all types of breech-loading and multifiring arms. It was easily transported, easily loaded into guns and as readily unloaded from them.

Unfortunately, Houiller's cartridge was an invention ahead of its time. In a world where flintlocks were still in fairly common use, the metallic cartridge did not have too good a chance for general acceptance, nor were facilities available for making it in quantity. It was more than twenty years before cartridges on Houiller's principle became the standard load for firearms, to remain so up to the present time.—*To be continued.*



**Like card tricks, fast gunplay proves the hand is quicker than the eye**

# "PRACTICE DOES IT!"

## By Chad Wallin

"No man is a 'born gunman'." "Anyone can become adept at double-action fast and fancy shooting and aerial target work if he will concentrate on the three things which mean success—patience, attention to detail and *Practice!*"

I'd heard Ed McGivern make those statements time and again. I'd read the same declarations in his book, but I never had quite believed them. Not after tossing buckshot in the air and watching them disappear before the blast of Ed's Smith & Wesson .38 and then trying unsuccessfully to get hits myself on a quart can only six feet over my head.

No sir! I was thoroughly convinced it took some subtle form of magic which either is or is not born in a man. It is because I think there are a lot of others like myself that I am writing this story. Ed McGivern showed me this summer where I was wrong.

I bewail the fact that this isn't the story of my training. Work took me away from Lewistown, Montana, where Ed holds forth, too often to permit steady practice. But it didn't take me away so often that I was unable to observe the training of two other handgunners. It is of these and Ed that I write.

Dick Hulme, six feet of transplanted Texan now living outside Oklahoma City is one of them. Dick rolled into Lewistown with the blue birds to learn the McGivern stuff. He had no other purpose and was able to devote his full time to the task. Dr. Jack Cox, Lewistown osteopath, is the other. Doc's case is more like yours and mine. He does not have full time to devote to practice but must get out when he can. He's just a gun-smoke enthusiast.

There we have two cases—the man who can devote full time to practice and the man who must practice catch-as-catch-can. Come along into the field with me and see them and McGivern at work and learn how Ed proved his point.

When Dick Hulme arrived in Lewistown he was strictly a single-action target shooter. He shot cards running from 85's to 98's at 25 and 50 yards—taking his time. He never had shot double-action. He was familiar with and owned a variety of handguns which he had brought along. They included everything from .22's to Magnums.

Dick had been training daily under McGivern for a week when I set out late one afternoon for the lower end of the Lewistown Rifle Club's range. I could see neither car nor men when I arrived but after cutting my car's motor I was able to pick up the "spak" of spaced shots. I headed toward the sounds and found Ed and Dick down in one of the coulees which traverse the range.

"Hiding out?"

Ed's reply bit. "Ever hear of safety?"

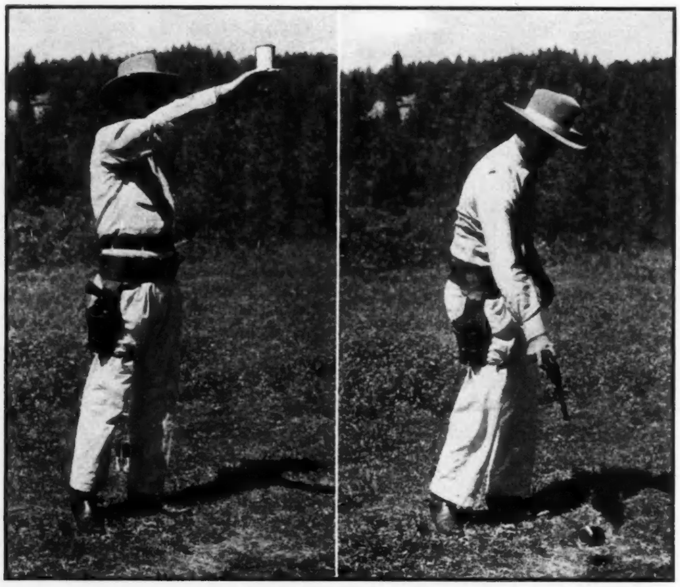
I then got a McGivern lecture on the first principle of shooting. It is "Be Safe!"

Concluding his lecture McGivern sat on the car's running board. "Throw a few cans for Dick," he said. "Stand about two feet to his right and slightly in front of him. Toss the can about six feet over his head. Throw with your whole arm in a smooth movement so that the can hits the same spot nearly every time."

I practiced a few throws and then Dick resumed practice. It was single-action work. He stood with the gun raised and the hammer back, and sighted for the general spot into which I pitched the can. As the can crossed that area he tried to hit it. In twelve tries he got two hits.

"I'll never do it, Mistuh Mac," he mourned. "Never; if I can't hit 'em single-action and close how can I ever shoot double-action?"

"You're doing all right," Ed replied. "Let's take a rest. Besides Wallin here is one of those writers. I want you to show him something. I have a story here by a writer saying a man shooting a .38 did the handkerchief drop trick from his wrist and put five shots in the handkerchief before it hit the ground. Will you show him how it's done?"



The can drop. It looks easy until you try to unhitch that six-shooter before the can hits the ground. Notice in this picture of Dick Hulme that the can is still off the ground

Dick grinned. He extended his right arm shoulder high with his gun in his right hand at full cock. On his right wrist he placed a loosely balled handkerchief. With a twist of the wrist he dislodged the handkerchief, deflected the .38 at it and blasted.

The muzzle blast on the first shot smacked the handkerchief into the ground in a flash. "Would you like to try to put five shots in the handkerchief before it gets to the ground?" Ed asked. "Listen, if you write like the gent who said it was possible, never write anything about me."

I got the hint but I had to grin. Ed's bark is always so much worse than his bite.

"Well," Ed continued, speaking to Dick, "you've been wanting to learn to draw so let's start now. No use wasting time."

Dick was wearing an open-top, single-drop Myres holster of well-worn leather tied down with a thong to his right leg. He placed the .38 carefully in it, placed his hands center on his belt and at Ed's signal went for the gun.

"You could have taken off your pants and shaken the gun out of a pocket a little faster," was Ed's comment.

"Look here," he went on, getting up from the running board. "You're like a lot of other would-be fast draw men. You put a gun in a holster where it seems to be comfortable and then you try to get it out of there as fast as possible. You depend on muscular speed alone.

"Fast draws are as much a matter of eliminating unnecessary movements as they are a matter of making the right movements at top speed. Every individual is different and he must, by trial and error, work out gun and holster positions so that the draw is one smooth movement. Excepting for some draws from under coats or in concealed positions, it is not a reach and pluck which means a change of muscular effort.

"Now let's move that holster down a little. Drop your hand naturally so that it reaches the butt. Now, let's slant it forward a bit."

For half an hour Dick and Ed went about the business of finding out what was the best position for that particular type of holster. Then, without a shot being fired, Ed called a halt. Satisfied, he sketched the position of the holster and he and Dick agreed that a new belt and holster were needed.

I then got an example of the McGivern teaching psychology.

"You were talking about shooting double-action," he said to Dick. "Practice a few dry shots. Let your trigger finger run out with the return of the trigger each time so that it has smooth rhythm. Just the tip of your finger on the trigger."

Dick complied and Ed said, "Well, there's just time for a few more single-action shots." He asked me to throw the can again.

Dick got set in his single-action pose. I tossed the target. "Crack!" It missed.

"Get it!" Ed's command almost blended with the first shot.

"Crack! Ping!" The can went whirling.

"I got it!" Dick cried. "Got it double-action!"

"I thought," said Ed, peering over his spectacles, "that you were the man who never could shoot double-action."

* * *

Three weeks later I joined another McGivern shooting group. This time we were gathered on an open flat at the lower end of the rifle range. Dick was resplendent in his new two-gun belt made by Al Furstnow of Miles City, Montana. The low-hanging hand-tooled open-top holsters were beauties. Dick also had a new .22 Colt made to match his .38 Colt. Both guns were on .41 frames with six-inch barrels. Dick also had a new coat of confidence. Doc Cox produced a set of matched Smith & Wesson's. His .22 was mounted on a .38 frame while the .38 itself was standard.

Dick, who had warmed up by shooting at a stationary target, began with simple, single-action work on a quart can. Ed and Doc watched while Ed explained.

"Wait until the can gets up. Get your sights on it and stay on it. Go forward with a coordinated movement of your body. Don't try to follow it by bending your wrist. Get your shots off before the can comes down to shoulder height. While the can is above your shoulder you have two diameters at which to shoot but when it drops below your shoulder your target size steadily decreases."

Three weeks had made a definite improvement in Dick's aerial work and the new holsters had slicked some kinks out of his draw. He was eager to learn the "can-drop" trick, the real test of a handgunner's draw speed. I listened while Ed explained.

"The can is on the back of your hand, arm out at shoulder height," he stated. "First get so you can drop the can in approximately the same line every time. Then forget about the can.

"Start to shoot the moment you start your arm down. It will take a lot of practice but your shot really starts the moment your hand goes for the gun. Your trigger finger must be curved and ready to meet the trigger as it clears the holster. The squeeze goes right on through.

"Get your shot off so the bullet at first traverses an area the size of the can about six inches off the ground. You don't think about the can because when your draw is fast enough the can and bullet will meet. The shot is double-action."

Remember, fellow beginners, Dick had had a month of training. He had shown improvement. He was no stranger to guns. He had been hitting aerial targets double-action. Yet now, as he entered another stage of training, the pressure was on. He fumbled the gun. He caught the sights on the holster. He could not even get his gun out, much less a shot off before the can hit the ground. This isn't related to belittle Dick Hulme. It is stated as fact to show that every time you attempt a speed stunt you don't need to get discouraged. Dick didn't. He kept right at it.

There was a pause for lunch and then practice resumed. Dick alternated between fast draws and aerial work on three-inch rosin balls. Double-action, Dick was getting four out of five. But you don't stop at four out of five with McGivern. With big targets like three-inch rosin balls it is five out of five.

Doc was beginning to get hits and Ed worked with him correcting his position, his grasp on the gun, his sighting. It was late when once again the McGivern psychology moved in to give Doc a boost. Doc was more than a little skeptical of his future in the aerial game. "Get your .38," Ed ordered. To Dick he said, "Get a rosin ball and make the toss."

Doc, who had been missing quart cans, eyed the three-inch target. "Sure you can hit it," Ed told him.

Doc lined out his gun. "Relax. Never tighten up," Ed advised him. Doc's muscles let go a little. Dick made the toss.

"Wham!" Doc got a dead center hit.

"Easy, isn't it?" Ed asked.

Doc smiled agreement. There is nothing quite as satisfying as the way a rosin ball flies apart when hit.

* * *

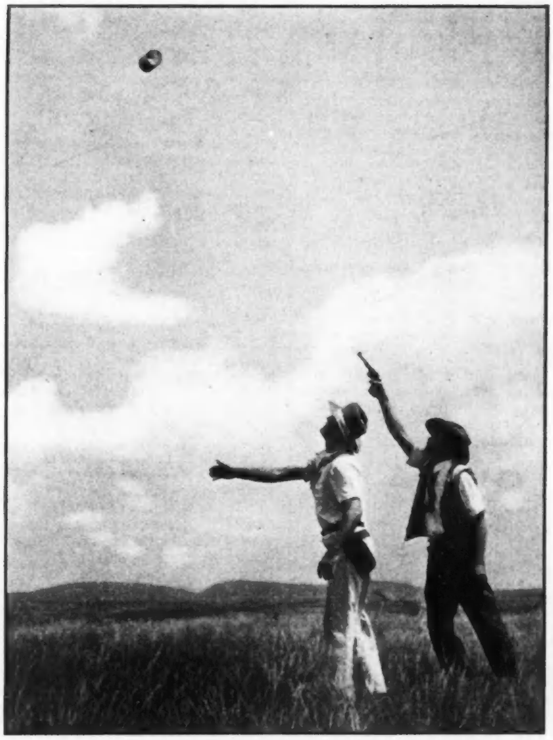
Dick Hulme started to learn in May. Doc Cox started in June. Throughout the summer I now and then joined the shooters and, possibly because I was away and then returned, could notice improvements in their gun work. It was not until late September, however, that I came in for the finale, the proof that every man can learn. Walter Groff, McGivern's understudy and a finished handgunner, came out from Philadelphia enroute to his ranch near Winifred, Montana. Ed made a party of his visit. We went to an ideal pistol range on the McEveney ranch in the Judiths. There a small flat for aerial work ran up into a gulch where there were secure natural barriers for other shooting.

I'm not going to write much about how that day proved that practice does it. I'm going to let the pictures tell that story.

After a warm-up on stationary targets the real shooting of the day began. (A tip—don't ever try any fancy stuff cold. Consider that every athlete warms up before he enters an event and that real shooting demands the tops in muscular coordination.) Walt opened by placing six large blue rocks against a plank, making six fast draws and breaking all targets. He used a Smith & Wesson .38 and wore a Myers Buscadero belt made to his personal specifications.

Aerial work started with quart cans, worked down to Blue Rocks, then Mo-Skeet-Os and then to shooting at the brass cases of shotgun shells from which the paper had been cut away. Targets were tossed directly overhead, over the gunner's head from behind, thrown in toward him and across in front of him. Since Walt had not had much practice for two years Dick and Doc were right after him. The competition was keen and Dick and Doc, who early in the summer had not been able to hit one of a dozen, were smacking the smallest targets right along with Walt.

**The first stage of aerial training. Doc goes after a can tossed by Dick Hulme. Note the forward sway of Doc's body and rigid arm as he "leans" on the shot**



BRIDGEPORT, CONN., FEB. 1942

## Possibles and Impossibles

by **FRANK J. KAHRS**

Here it is February again . . . And while shooters up North are trying to get their hands thawed out to the point where they can hold a gun and pull a trigger on an indoor range, shooters in southern climes are getting a healthy tan, while they fire away at outdoor targets under sunny skies and June-like temperatures. 'Taint fair, but we'd surely like to be down there with them, anyway.

* * *

When we were in London with the Pershing Rifle Team in 1937, we had a yen to see the inside of a British movie house. It so happened that all of the team had the same thought at the same time, and so by pre-arrangement we all trooped to the cinema on Piccadilly Circus and saw "Lost Horizon." We hadn't had time to see it at home. We were quite impressed with the picture, particularly that utopia of everyone's dreams, the land where you stay young and live forever. They called it Shangri-La, and the other day we had a letter from Shangri-La, the dream place of the sportsman, but I will let you judge for yourself when you read the letter, which is reproduced exactly as it was written to me by a good friend who just wanted me to know that he was thinking of me:

"Dear Friend: This the time of the year we think of those whom we have not seen. This year will soon be in the past.

"The 'Chinese' in me says to pay my debts. I owe you a letter. The last shooting year has been good to our shooters. We lost our indoor range, now have a new one better than ever, steam-heated, cement floor and more room than we ever had before. We had a good big game season, elk and deer. All the game was in good condition as last summer was wet and the mountains were full of feed. Do wish you could come and hunt with us some fall; our boys have horses and all kinds of camp equipment. Know all the good places to hunt. Some are even good cooks. We are only fifty miles from the best elk hunting. We have deer hunting in our back yards. If you ever see your way clear, do come and hunt with us.

"Pheasant and duck season was good. Had lots of good shooting and plenty of birds. Bought two cases of Nitro Express shot shells. Will have enough for next fall.

"Fishing was the best last summer it has been in years. Lots of rain which made plenty water in all the trout streams.

"Have a four-and-five-eighths-ounce fly rod. Caught a four-and-one-half-pound trout. Went fishing about four times a week. It is only five miles to a good trout stream.

"Wishing you a Merry Christmas and the best of luck in the New Year."

Talk about starting the New Year right, at the moment it looks as if we are all set for the year.

* * *

Out in Tulsa, Oklahoma, they have started a smallbore rifle school in the public school system for boys and girls of 12, 13 and 14 years of age.

The school will continue during the winter months. Of course, the idea behind all of this originally started with some of those hardy men and women who took up rifle shooting as a sport, and then came to Camp Perry last year for the benefit of the competition and what they could pick up in the way of knowledge. This very excellent school for basic training in smallbore rifle shooting operated so successfully there last September that they wanted to establish rifle schools at home.

There is no limit, of course, to how far the schools generally can go in the direction of teaching rifle shooting to boys and girls of tender years. If it teaches them no more than the fundamentals of safety, then the time and effort have not been wasted. Those at Tulsa, Oklahoma, who are behind this movement and who make it possible, are to be congratulated not only for their initiative, but for their practical efforts to promote the fine sport of rifle shooting.

* * *

Again our thoughts turn southward. Frankly, we don't like winter because it means snow, hail, rain, cold, warm and then it starts all over again, only it gets worse. Having just returned from a very successful hunting trip in the southwest where we got our fill of duck, quail and deer shooting, where the temperature was just right and the humidity was kind to our sinus, we naturally feel the urge to get back to a more kindly climate. We are thinking, therefore, of the first week in March, when we plan to start again for the Mid-Winter Rifle and Pistol Championships at St. Petersburg and Tampa respectively. Then the Miami International Open Pistol Matches, and on down to the Keys and some turtle steaks and other products of the deep. Oh, shut up!

* * *

Speaking of Texas, we just got a letter from one of our Texas shooting friends, who sent in for one of our 400 brassards. His kind remarks about the Model 37 he shoots made us feel proud of this great Remington performer all over again. He purchased his "Rangemaster" Model 37 in October, 1940, and has been shooting it on the range every Sunday since. He states that it's the sweetest-shooting rifle he ever had in his hands, that the trigger is as smooth as boiled okra, and, in fact, the whole gun is just tops. He adds that his 400 brassard was made with "Police Targetmaster" ammo. We sent our friend his brassard, and with it went our thanks for his sincere tribute to these two outstanding Remington products.

Rifle Re

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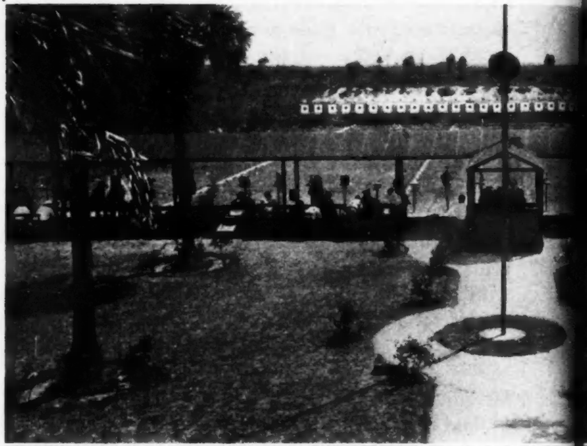
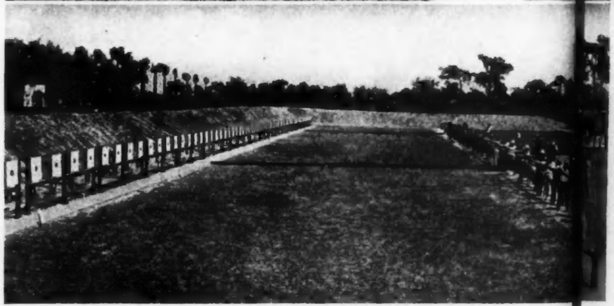
REMINGTON PISTOL

MARCH IS THE MONTH FOR





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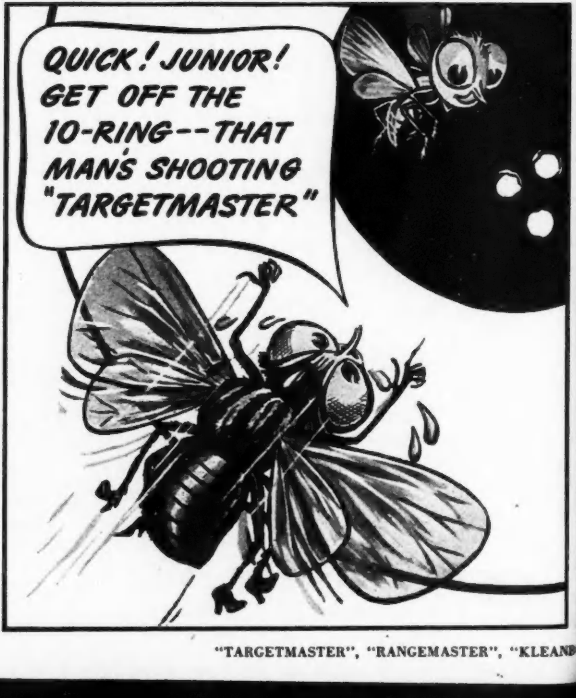
QUICK! JUNIOR! GET OFF THE 10-RING--THAT MAN'S SHOOTING "TARGETMASTER"

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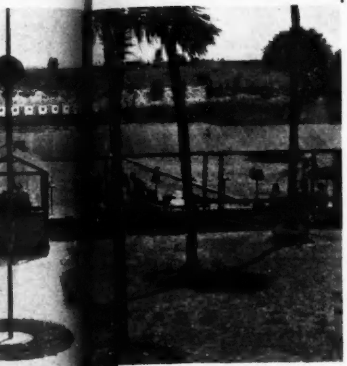
"TARGETMASTER", "RANGEMASTER", "KLEANBO . Pat.

Re ton News

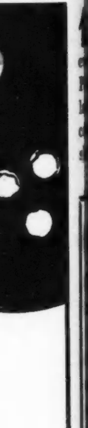
**A PAPER FOR PEOPLE WHO SHOOT**

# R S RES IN HANDGUN EVENTS—USE TOL MO, DESIGNED FOR MATCH COMPETITION

## FOR F DA MATCHES



**↑MIAMI, FLORIDA.** It's bright and sunny and warm down here. And you've seen some of the gals in the newsreels. Most important Miami attraction to pistol shooters, however, is the biggest match of the Mid-winter season—the colorful and well-attended Miami International Open Pistol Tournament, held at Miami, March 24-28.



**FLORIDA.** You certainly
nt to miss this big Florida
pular National Mid-Winter
ment at the beautiful Tampa
h 17-21. Even if you don't
winning it's a pleasure to
y the hospitality at Tampa.

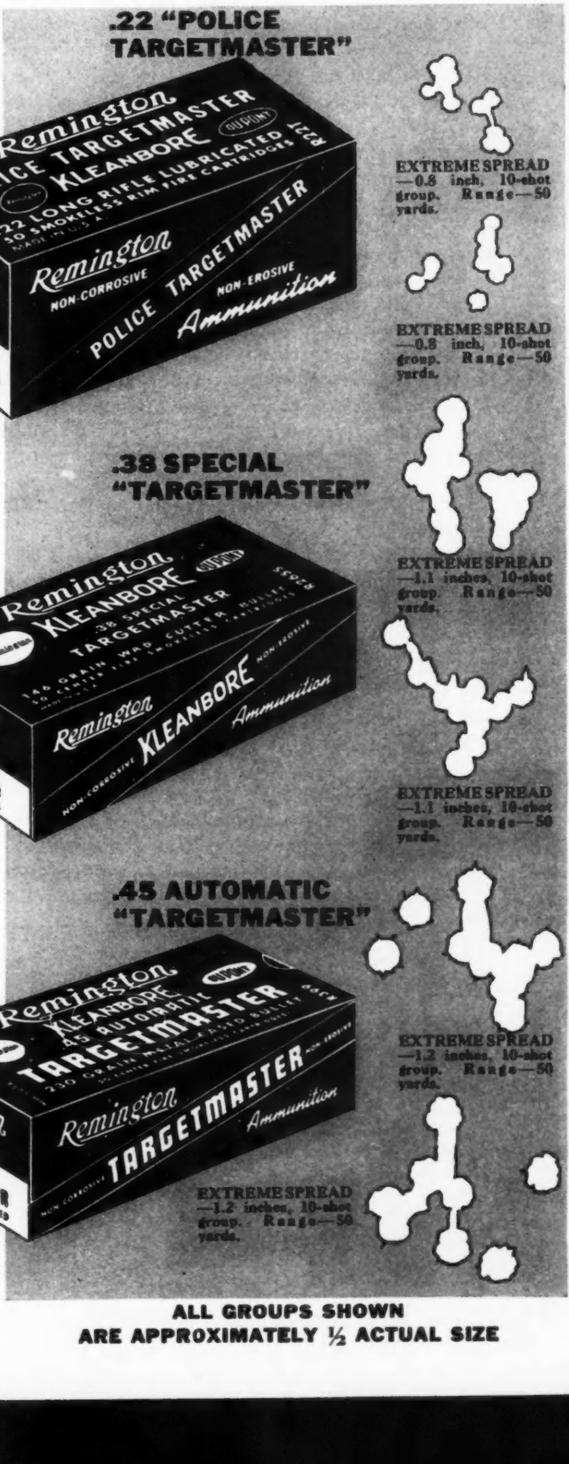
It looks as though the
National Mid-Winter
es scheduled for St. Pe-
Florida, March 11-15 will
a record-breaking event.
allbore fan is looking for-
tching suntans and tight
e St. Pete matches, where
ition is always hot. What
er than to be down on the
rida, ready to pour them
X" ring? This is such a
hat it will give you an ex-
use to take that Florida

*Every batch of Targetmaster cartridges is checked and tested to insure their grouping characteristics—no wonder they're favorites with pistol shooters everywhere!*

To the right are six groups made with Targetmaster ammunition, using machine rests. They are average groups, picked at random from the test groups fired with every batch of Targetmaster ammo. These groups are made to be sure that every single Targetmaster bullet will give the utmost in accuracy, uniformity, and dependability under actual shooting conditions. These grouping tests are only a part of the day-in, day-out inspecting, testing, and checking that our laboratories carry on to keep Targetmaster ammunition up to the highest match standards. That enables Targetmaster ammo to make—and break—new records every year.

### "Targetmaster" Features That Mean Better Scores

All Targetmaster cartridges have Kleanbore priming that gives fast, snappy ignition, guards against rust and corrosion, and makes barrel cleaning unnecessary. All center-fire Targetmaster match cartridges are smooth functioning, and specially oil-proofed to protect them against the damaging effects of gun oil. The .22 Police Targetmaster has a special fast-burning powder to cut down muzzle flash, so annoying in indoor and rapid-fire matches. The Targetmaster line is complete for every type of handgun: the rim-fire Police Targetmaster Long rifle .22, the center-fire .45 Automatic, .38 Special (with wad-cutter or round nose bullet), and .32 S. & W. Long. Naturally, cartridges made especially for match events give better results.


.22 "POLICE TARGETMASTER"
Remington
POLICE TARGETMASTER
KLEANBORE
.22 LONG RIFLE LUBRICATED
NON-CORROSIVE
NON-EROSIVE
Ammunition
.38 SPECIAL "TARGETMASTER"
Remington
KLEANBORE
.38 SPECIAL TARGETMASTER
146 GRAIN WAD CUTTER BULLET
Ammunition
.45 AUTOMATIC "TARGETMASTER"
Remington
KLEANBORE
.45 AUTOMATIC
TARGETMASTER
230 GRAIN METAL CASED BULLET
Ammunition
EXTREME SPREAD —0.8 inch, 10-shot group. Range—50 yards.
EXTREME SPREAD —0.8 inch, 10-shot group. Range—50 yards.
EXTREME SPREAD —1.1 inches, 10-shot group. Range—50 yards.
EXTREME SPREAD —1.1 inches, 10-shot group. Range—50 yards.
EXTREME SPREAD —1.2 inches, 10-shot group. Range—50 yards.
EXTREME SPREAD —1.2 inches, 10-shot group. Range—50 yards.

**ALL GROUPS SHOWN ARE APPROXIMATELY ½ ACTUAL SIZE**

, "KLEANBO . Pat. Off. by Remington Arms Co., Inc., Bridgeport, Conn.

Two-gun work on stationary targets, two guns on five-quart cans, rapid fire on the five-quarts in the air, swinging ball targets—all came in for workouts.

After the aerial work Dick started the draws. Illustrations of the difficult "can drop" and the "behind-the-back toss" accompany this article. They are strictly action shots. If you want to see what it takes to do them try them yourself. But, after you try them—and miss—remember that Dick, just a few weeks previously, couldn't do either of them.

Or try Doc's trick with two guns. While your partner takes the single-action first shot you jerk the can-tosser then go for both your guns and get a shot from each one in the cans before they are halfway down.

What can practice do? Well, that's what a summer of it did, full time and part time. Now just a line to show what more than forty years of practice can do.

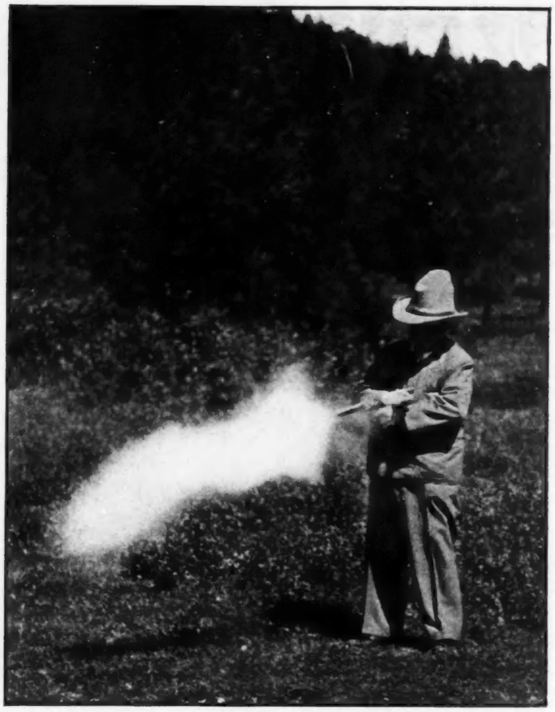
Since 1937 Ed McGivern has suffered from recurrent attacks of muscular inflammation. He is the first to admit he is not the McGivern of five years ago. But, pardner, don't make a mistake and try a "shoot-out" with him.

At the insistence of us all Ed, who had not shot much during the summer, agreed to try a few. Ed took a recently rebuilt Colt .38 with a 4½-inch barrel which he never had had a chance to try out. He sighted it in briefly and then began. He started on two-inch rosin balls—singles, doubles, and then triples. He worked up on Mo-Skeet-O birds flat toward him and then broke them edgewise. He then hit Mo-Skeet-O halves which wobbled. He shot and hit them all lying down, sitting, standing, and throwing the target up behind himself.

The climax came when the writer tossed pieces of broken Blue Rocks no bigger than his little finger nail into the air and Ed did crossdraws and smacked the pieces into infinity.

Walt Groff marvelled. "How can you do it after all that muscular trouble?"

"For the reason I've been pounding into the heads of Dick and Doc all summer," McGivern told him. "Because for forty years I've practiced. Once you get your reactions worn into shape so the impulses go through, there may be lots of times when you won't be tops but you'll never be really bad again. Yes sir, practice does it."



**McGivern fans his S-A Colt, with the cartridges used in Hollywood for smoke effects. Taken at 200th of a second, McGivern loosed three shots before photographer could overcome reaction time and snap the camera's shutter**

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# ORDNANCE QUOTES

¶ *Washington Front:* Armament production and delivery to troops continues to reach new heights. New plants are coming in, rates are increasing in nearly all categories. After 16 months, the Ordnance program is right at the threshold of balanced production *as planned*. This despite many nearly insurmountable obstacles since September 1940 and notwithstanding requirements which have been doubled and redoubled and doubled again.

¶ *Two Weeks:* Production of smokeless powder in Government-owned plants increased 16% in the first 2 weeks of the war. The first Ordnance Department smokeless-powder plants started production March 1941. The rate has been increasing constantly ever since.

¶ *Mortars:* During the past year, the Ordnance Department has boosted production of mortars to such heights that the entire armed forces are now fully equipped with the mobile, high-angle, short-range weapons. Mortars are used by infantry and armored divisions and by Military Police battalions.

¶ *Defense Dots:* Trainee model-plane builders supply targets for A.A. practice at Camp Roberts, Calif., where shooting down model aircraft is reported as a valuable aid in developing accuracy in A.A. fire . . . Ordnance uses 9½ pounds of silver in each 155-mm. and 8-inch howitzer . . . It goes in the recoil mechanisms, reducing friction and helping leather and rubber packings to retain oil pressure.—From "*Army Ordnance Bulletin*" of the Army Ordnance Association, Washington, D. C., for January 15, 1942.

## "BACK TRACKING:"

# SAGA OF A SPRINGFIELD

By Gerald Averill

IF YOU ARE ONE OF THOSE ultra super-speed hand loaders who demands and gets 4,000 feet-per-second and groups measuring one inch per 100 yards up to six hundred, just turn to the next article. This one is not for you.

To set things straight in the beginning, let me state that the only efficient handload ever developed and used by me consisted of about four drams of black powder (no Cream of Wheat or Post Toasties) behind seven cast-iron sleigh-bell clappers. This charge, carefully segregated by wads of the best felt cut from an old pair of larrigans and encased in a 12-gauge brass shell, proved to be, in the words of the vernacular, "the berries." Just 32 years ago come next November I squinted down the barrel of an old single Iver Johnson Champion, shut both eyes and presented a very fine buck with that load of loot filched from the bells of my grandfather's pung, and gentlemen, believe me, a buck with a snoot-full of iron bell clappers feels just exactly as bad as if he had been overtaken with a .267 something-or-other O'Neil-Dubiel-Keith-Magnum-Deluxe-Duplex with solid gold bearing bands and platinum gas-checks.

Now that we have the background we can proceed with the story—a story about a rifle. In the beginning it hung upon a panel in the dining room. There were a lot of other guns along with it in 1919, and with the sling and bayonet attached, it served merely as a souvenir and an ornament. Don't ask me how it got there because I can't remember back that far. Maybe it followed me home from the South Carolina Campaign or perhaps, like Topsy, it just grew. Anyway it was a good Springfield with a lovely pull.

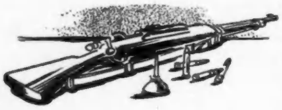
You remember how things were just after the war. It didn't work out so well for some of us and after a while the other guns disappeared one by one and it hung there alone. It hung there until a certain cold November evening with a hint of snow in the air when it was taken down in desperation, cleaned, oiled and made ready for use. There were quite a lot of old 1918 loads with the cupro-nickel jackets that followed along with the gun, poor game loads to be sure, but much better than nothing, and the next morning at day-break there was four inches of soft snow on the ground.

If you've ever hunted when you really needed meat, you'll know it's tough going. You're over-strung, you creep and sneak and send the scent of murder far ahead of you. It's exhausting work when you're floundering around in slippery snow in a pair of broken down mail-order leather shoes and soaked to the hide with the icy drip from trees and brush. I stopped around noon at the crest of an open hardwood ridge to light the half of a cigarette that I had saved since breakfast, and while I fumbled for a dry match, a spike-horn broke from behind a boulder and bounced down the slope. I dropped the smoke, swung the rifle to the front and finally got the safety off just as he turned broadside to me and stopped about a hundred and twenty paces below. The sight was down and I had no time to tip it up so I lined up on what I thought was half way up the front leg and let go with the battle sight.

Now I had been told times enough that the 150-grain service bullet would not open, it would simply punch a .30 caliber hole right through one side and out the other, so I was entirely unprepared for what happened. That bullet landed in a cloud of deer hair and down went the buck, flatter than Mussolini's African campaign. I don't know just what happened, whether the slug keyholed, tumbled or struck base first. Anyway it landed high up on the right shoulder, ripped diagonally down through the chest cavity and came out under the opposite shoulder leaving a hole larger than a silver dollar.

That gun became famous during the following summer. I had several windfalls of ammunition come to me and I used a lot of it. Give a man a good Springfield, even as-issued, an almost unlimited supply of hulls and he can learn a lot about shooting, especially when he has a whole mountain to shoot over. Granite back-stops to mark long range hits and a couple of miles of mud flats at low tide, solitude and something to shoot at all the time? Well, it will serve to pass the time away even if it's not as good as a job with a steady income.

When fall came, not a crow would light on that mountain. I had the whole area plotted like the entrance to Gibraltar, and the range-marks on that old ladder sight were absolutely true. I shot a number of geese and ducks on the river and when the deer season approached I invested in a box of 180-grain Western Open Points and sighted in with them. With the U-notch on the 200-yard line, I could keep my shots in the black of a standard fifty yard pistol target at 100-yards and that was good enough. I went deer hunting.



There was a log pile and back of it a long open meadow. We sat on the logs, three of us and talked of this and that, in the pale November sun. It was hard hunting. A rain had come followed by a quick freeze and you could hear a man coming through the frozen leaves half a mile away. We sat and chewed tobacco and grumbled, and then I happened to glance behind me across the open field. I looked again and the buck stepped out from the dark of the pines and stood motionless. He froze for a moment and then he must have heard something behind him, for he turned quartering away from us and all I could see was a glimmer of white belly and the white flare of his flag. I slid off my log and into the prone position as he turned and a voice behind me said, "You're crazy, you'll never make it. It's ninety rods across there. I measured it once."

So I set the U at five hundred, put the blade on that tail, moved it ahead a little and touched her off. I got a beautiful belt in the chops, due to the position I was in, but the buck was down behind, his spine smashed about half way between the rump and the shoulders.

The next year I stripped off some of the iron and did kind of a home-made restocking job. No receiver sights as yet, but what I did was a big improvement. I had much less time to hunt as I was working, but a few days after the open season, I fed the old girl a clip of Western 150-grain open points and cut down on a big doe standing at about fifty yards. The blade front sight had been replaced with a fine gold bead and when it settled on her right shoulder, I squeezed and at the report I saw the leg on the opposite side fly up over her neck. She went down in front, but gathered her hind legs under her and skidded into the brush out of sight. There was a great pool of blood in the snow and a piece of brisket as big as my hand, so I didn't worry any about her going far. While I was looking at the results of my shot, a wild-eyed farmer charged down on me blubbering that I had shot his deer that he had been following all day, so I let him finish her off and claim her on his license as I didn't want to fill mine just then. I took a hind quarter and a loin for my share and was glad I did when I saw what was left of the fore quarters after skinning. Both shoulders were smashed and blood-settled, and the meat was driven full of bone splinters.

I killed my buck a few days after with a 220-grain soft point. It cut the heart nearly in two, went clean through without spoiling much meat, but the deer ran nearly a hundred yards into a tangle of blowdowns. It was one heck of a job getting him out alone.

Now one would think from reading the better known sporting magazines that the .30-'06 is now just a little better than obsolete. Maybe it is but when you have one gun that will handle about twelve different commercial loads and God knows how many different combinations of handloads, it seems to me that some of our so-called improvements are a little far-fetched. I think I have used about every commercial load that is commonly sold over the counter, and some of them have certain drawbacks that must be taken into consideration. One summer I used the Winchester 150-grain umbrella point on 'chucks. It was a honey for that kind of shooting. Very accurate, mild recoil and at a hundred yards, which is about my limit with iron sights on small objects, it would fairly lift a 'chuck off a rock and turn him inside out. I liked it very much so I took it with me down into the southern part of Hancock county where there are some big bogs and burns, on a deer hunt.

Now I realize that ninety-nine percent of eastern deer are killed within fifty yards. Don't take my word for it, you can read about it in any sporting periodical, *but* there is a lot of good open long-range shooting in Maine regardless of what you read or what anyone tells you. Anyway, on this trip I caught a buck flat-footed right out in an open bog and opened up on him at about three hundred yards. I had a good receiver sight on the rifle and as he ran quartering away from me, I gave him a full clip before he got out of sight around a point. I was sure I had landed at least one bullet on him and I found him all right after half a day's search. Two of those 150-grains had connected in a good place well up in front but they went right through without opening up at all. They would probably have wrecked him properly at two hundred, but over that—well, there was the evidence.

I tried the Remington 110-grain Hi-Speed load but could not get even fair accuracy out of it. No doubt it would shoot in some rifles but not in mine. In fact I never did have much luck with the extremely stepped-up loads, and the only deer I ever lost because of a bullet blowing up in brush was the result of experimenting with the Remington 150-grain 3000-foot load. The bullet connected with a small spruce about an inch in diameter and when it got to the deer, it was just so much bird shot. I know because I downed him with a 180-grain open point a few days later and when I skinned him out I found some small pieces of jacket under the hide next to his ribs.

That same year a friend of mine made the mistake of using the Western 220-grain with the short exposed point on deer. This bullet was intended for much tougher and heavier game and was purposely designed for delayed expansion. It was sold over the counter in Maine as a deer load, however, and for one season at least it caused a lot of cussing. That long heavy bullet would walk right through all right, but it didn't throw much blood and a lot of deer got away because of it.

The last two deer killed with my old gun went down with regular 172-grain service loads planted in their bosoms. You file the points down to where the lead core shows through, smooth them up neatly, and mister you've got something! At ordinary hunting ranges these doctored bullets will mess things up considerably, and one of them planted too far back is apt to spoil the best part of the meat. If you're not entirely satisfied with the carnage, file the next ones down a little more and use a breast drill a little. You'll be surprised and so will whatever it connects with.

All good things must end. A couple of years ago while shooting at small rocks imbedded in the sides of a gravel pit my shots began to go wild and a paper test proved conclusively that the old barrel was gone. I don't know how many service loads passed through it, but I know of four thousand with cupro-nickel jackets that I used myself, add another two thousand of the later gilded jackets and five hundred commercial loads, and that's about what I managed to burn up personally. The gun was far from new when it came to me, but I know I had more pleasure from it than most men get from even the finest and most expensive rifles.

They say that when a man begins to dwell on the past instead of looking forward to the future, he is getting old. Possibly my ideas are as obsolete as that old Springfield, but when I look back over an average of a deer a year for eighteen years, and most of them killed with one shot, I'm inclined to wonder just why anyone would want a better rifle except perhaps from the gun crank's experimental angle. Of course I'd like some of the new ones to play with, but if I could make a wish right now and have it come true, I'd like to go right back to the morning I took that old relic down off the wall, and begin all over again.

# AN OPEN LETTER

To The Chairman of Local
Civilian Defense Councils

*My Dear Mr. Chairman:*

In the process of perfecting your local Civilian Defense organization, you are undoubtedly distributing or preparing to distribute questionnaires. Beyond a doubt, someone on your Committee will suggest that registration with the Defense Committee of the privately owned firearms in your community would be a good idea. Unless you think twice about the matter, you may request such registration as a part of your questionnaire. For the best interests of your community, do not do it! Such registration will contribute nothing to defense and it may serve as a very dangerous boomerang.

Ask yourself what you would do after you had indexed these firearms. In an emergency, would you ask for the loan of these guns for distribution among the volunteers in your various defense groups? If that is the thought that has been in the back of your mind, ask yourself what value these borrowed guns would have in the hands of untrained civilian defense workers. Would *you* want to have a gun which you had never seen, a gun which you did not even know how to load, suddenly thrust into your hands with instructions to go out and face a mob of desperate looters or a hard-bitten Fifth Column raiding party? A gun in untrained hands is more of a menace to the man who holds it and to his law-abiding companions than to the law-breaker or subversive agent.

But, perhaps the person who suggested the registration of firearms had in mind listing the citizens who own guns, so that in case of an emergency they could be utilized as armed defenders for the community. That idea is practical—provided the men who do know how to shoot are properly organized. In other words, what *you* need to know is *not* where the *guns* are, but where the *men* are who are capable of properly using their guns. These are the men, obviously, who should be first approached with the request that they volunteer their services as members of the civilian defense auxiliary police unit.

The question, then, which you should ask on your questionnaire, is: "Are you thoroughly familiar with the safe and accurate handling of firearms and, if so, will you volunteer as a member of your local auxiliary police group?"

The registration of privately owned firearms can prove to be a dangerous boomerang. It must be borne in mind that, war or no war, we still have criminals in our communities. Small groups of three to five criminals have on numerous occasions swooped down on state and municipal police stations and have taken command of the station long enough to appropriate to themselves arms and ammunition belonging to the police. Had there been available in those police stations registration lists of the privately owned firearms in the community, the criminals would have had a card index showing just what home to "visit" in order to obtain any particular type of gun which they wanted for their "business."

Normally law-abiding England has had unpleasant experiences with her criminal element during emergency incidents. It is only common sense to anticipate that *our* criminals will also seize upon emergency incidents to ply their trade in American communities. We certainly do not want to help them, and firearms registration lists *could* help them!

Another fact to be borne in mind is that the accepted Fifth Column technique calls for raids on the homes of citizens who possess firearms. Such raids may be in the form of burglaries—to more adequately arm the Fifth Column group while at the same time reducing the ability of the citizens of the community to defend themselves. Such raids may also take the form of a swift, unexpected attack for the purpose of destroying manufacturing, communication or public utilities installations. In this case fast-moving two-man teams will seek to confiscate privately owned firearms in the area under attack, or to "immobilize" the men who own those guns. Centralized registration lists of privately owned firearms have been of great assistance in Europe to the Fifth Column groups. Had such registration lists been available to the Fifth Column in Hawaii the story of December seventh might have been even more sanguinary!

It is unpleasant to contemplate, but a fact nevertheless, that in setting up your Civilian Defense organization you are dependent on volunteer workers. Such a situation provides a happy hunting ground for the trained Fifth Column operator. And if you were to undertake the registration of privately owned firearms, it would be impossible for you to assure yourself that the lists were not in the hands of subversive agents almost as soon as they were in the hands of your Committee.

The fact that the registration might be handled by the local police is not an adequate answer to these objections. Police stations have in the past been taken over and held for an appreciable period of time by criminal groups! It is also a fact that supposedly confidential lists, not only of local governments, but even of the Federal Government, have been lifted from the files in their entirety or have been extensively copied by trusted employees and sold to interested parties outside of the government!

These risks would probably *have* to be taken if there were no other answer to the problem of civilian defense. There is, however, another answer and a more practical one—the registration of the *men* who know how to properly use firearms and their enrollment in the auxiliary police unit of your community.

Sincerely yours,

NATIONAL RIFLE ASSOCIATION,
C. B. Lister,
*Secretary-Treasurer.*

# "SHOOTING *across the* BOARD"

## PART II—THE KNEELING POSITION

*By* FRANK PARSONS, JR.

IT IS A SAFE BET that of the three positions most widely used, the average shooter secures the least satisfactory results from the kneeling position. This may be due to any of several reasons but any of them are bad if the shooter has any desire to fire in three-position matches. These generally unsatisfactory results are so often caused by the shooter's failure to understand the kneeling position and the splendid scores which can be fired once the proper position is reached. The pictures accompanying this article are again those of Dana Wallace, Assistant Coach at George Washington and one of the all-time stars of the George Washington team.

The position illustrated is the one we teach at George Washington to anyone physically capable of assuming it and its capabilities are best illustrated by a series of scores which are well remembered. In eight consecutive matches fired indoors at fifty feet during his last year on the team, Wallace fired five 99's and three 98's. While it is granted that these were exceptional scores not only for their brilliance but for their consistency, they were all fired under shoulder to shoulder conditions and most of them on foreign ranges.

I would not hesitate to say that the average normal individual, physically capable of assuming the position which we will explain (and that includes the majority of shooters) can expect after a reasonable amount of practice in this position to hit a consistent 94 or 95 and have the satisfaction of knowing that this position is capable of scores right on up to 100 out of 100 at the fifty foot range which we are using more or less as a yardstick in this discussion.

In my opinion, the finest kneeling shooter in this country today and for the last fifteen years is Dr. Emmet O. Swanson of Minnesota. I had the pleasure of shooting against him while we were both in college and again on the American Team in 1930. I believe I can truthfully say that his position varies only in very minor details from the illustration shown of Wallace.

In the ensuing instructions on the kneeling position, we are going to assume that we are talking to the individual shooter, going through the mechanics of actually getting down into position from the time we put the sling on the arm, again assuming the shooter to be right-handed, and making many references to the photographs of Wallace as we go along.

If you will check your copy of last month's RIFLEMAN, you will notice by comparison that the angle of the left arm is slightly more acute in the kneeling position than it is in the prone position. This is due to the fact that the sling in the kneeling position is shortened one notch from the prone position. This tends to raise the rifle so that the line of sight comes up to the shooter's eye rather than putting the shooter's eye down to the line of sight, hence less strain on the neck.

And now comes the point which will decide whether you can shoot in this so-called low kneeling position or whether, due to your inability to sit on the inside of the right foot, it might be necessary to use the higher so-called military kneeling position, which we will discuss later on. The shooting mat should be of sufficient thickness to provide a fair cushion for the ankle. Face the target and kneel down, kneeling on the left leg with all the weight on it and the right foot tucked under the body. After placing the lower right leg and foot as shown in Figure 1, sit on the inside of the right foot as squarely as possible and then rock back and forth on the left leg until you can sit comfortably as shown in the illustration. Then, and not until then, should the left foot be placed out in front as shown. I might add that the value of this position is so great that many men on the George Washington team have spent from a week to a month devoting their kneeling practice time solely to learning to sit on the right

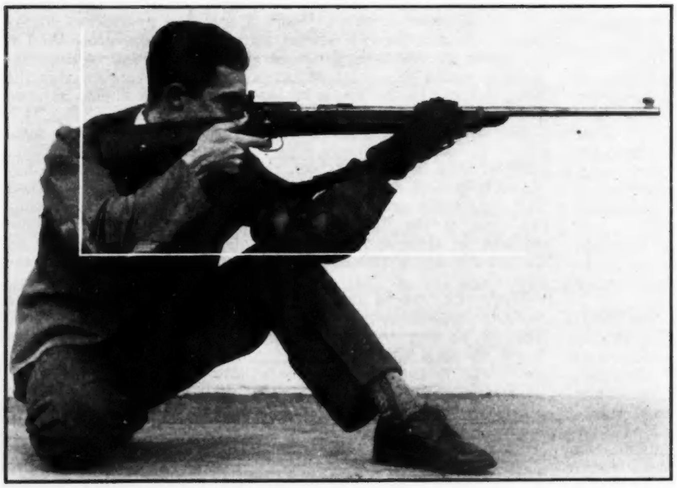


**Fig. 1: Here Dana Wallace, assistant coach of the G.W. team, demonstrates the kneeling position he has used in gaining recognition as one of the all-time stars of collegiate rifle-shooting. On the opposite page (Fig. 2) is a front view of his near-perfect style. Note the resemblance to the prone position in the area inside the white line**

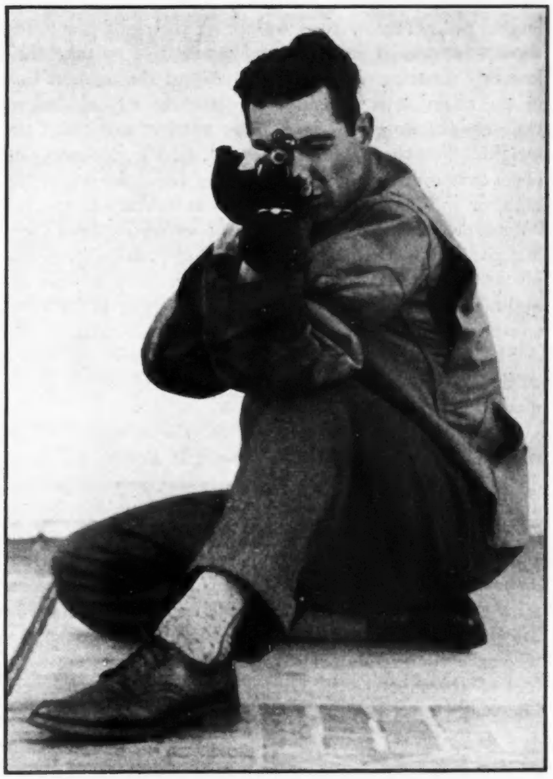
foot as illustrated but the results have been well worth the effort.

The left foot should, of course, be placed in position before the elbow ever goes on the knee. There is only one exact forward position for the left foot and that is as far to the front as it can be placed at the same time having the foot perfectly flat on the shooting mat and at the same time feeling no tension immediately over the instep. On trial, you will find that this tension disappears as the left foot is pulled back about one inch to one and one-half inches back of the most extreme forward point where the foot is flat on the floor. In Figure 1 you will notice the approximate position as regards placing it from side to side. A good rule of thumb method would be to place it so that the rifle barrel is very slightly to the left of the left heel. The only way to find the exact spot for the side to side position of the left foot is to actually get in position, preferably with the eyes shut, then with every muscle relaxed look through the sight and see that the gun is pointing naturally on the target. If it is not, move the left foot in the direction indicated.

We all acknowledge, of course, that the proper position is one in which every possible muscle is completely relaxed. Those who attempt to shoot kneeling with the left knee sagging outward heartily subscribe to this theory but fail to achieve it in practice. In actual practice, this sagging can readily be corrected by turning the toe of the left foot slightly inward. As illustrated in the photograph, it can be noticed that the left knee will automatically come either over or inside of a line drawn from the heel to the left hip. It is well to bear in mind that this is the only position for the left knee which is satisfactory. The pressure of the left arm in its proper position on the knee will be down and slightly to the right of the shooter, which will help to keep that left knee inside the line mentioned.

When I first started shooting this kneeling position, I believed that the farther down on the left leg the left elbow was carried, the better the results I would get. Experimentation with this position, however, showed that all I was doing was making work for myself and not even getting the best results from it. This is a fault so common today that if all the shooters placing their arms way down on the left leg would realize the fallacy of the position, it would not only improve their work but make the job of all referees in matches much more pleasant. The proper point of contact with the left knee is a spot from three to four inches from the point of the left elbow. Of course, a bulky shooting coat is slightly misleading but I'm speaking of the actual arm itself. By placing your left arm in the spot indicated on the left knee, you will notice that it is possible to roll the arm back and forth on the knee with the muscles on the underside of the arm being the flexible part of the connection. You will also notice that if you place your left arm very slightly to the left of the kneecap itself and then roll it to the right, it will come to a natural stop just inside of the kneecap. This will then give you a left forearm which is directly under the barrel of the rifle as it should be and also that downward and slightly to-the-right pressure which will help to keep the left knee from bowing outward.

There are, of course, many points of similarity, if not actual duplication, of the prone position. It is well to dwell for a moment on the angle and position of the left arm, both from the front and the side. Notice that the left hand has been pushed very far under the barrel of the rifle so that the barrel is resting in the crotch of the left hand with no pressure being exerted by the fingers.



Note from Figure 2 that the butt of the gunstock is carried in the shoulder in a slightly higher position than is the case prone. There is a definite reason for this. Using the same gun and therefore the same amount of drop in the stock, the upper part of the body is, of course, much more erect than it is in the prone position. It is therefore necessary to raise the rifle as regards the position against the shoulder so that it is not necessary to strain the neck in pushing the head down to look through the sight. Note that the right arm serves no useful purpose except to provide you with a hand which should exert a firm but not extreme pressure against the shoulder. For this reason, the right arm should simply fall in the most comfortable position and be forgotten.

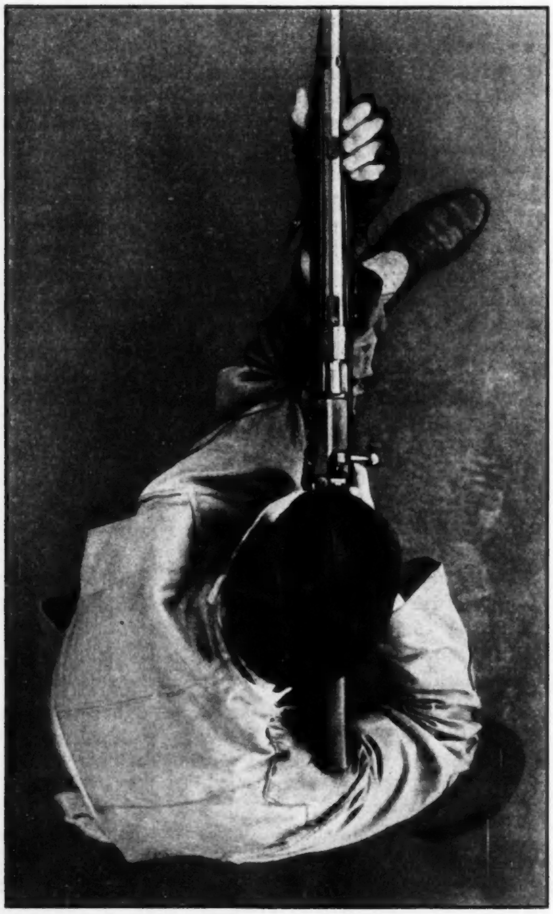
While there is some advantage to having the right leg placed out at about right angles to the line of fire, this is not necessary and should simply be in as open position as possible to provide a large shooting platform without the feeling of any strain in the crotch.

One of the important things to bear in mind about this position is the fact that the weight of the shooter should be distributed approximately seventy percent on the right leg and thirty percent on the left leg. By keeping this in mind, it will be possible for the shooter to check his weight distribution. Many men have the tendency to have so much weight placed on the right leg that they tend to slip over backwards and have to divert some of their attention to staying in position rather than all of it to shooting with the proper position.

This proper weight distribution is also the reason for a small percentage of the shooters being unable to get into the position, due to the fact that they cannot put that large a percentage of their weight on the right foot. For those who take it seriously and would like to take their kneeling shooting out of the category of the weakest link in the chain, it is really worth spending a good deal of time conditioning the right ankle until it will stand the weight. For those who, after trial, find it impossible to place that much weight on the right foot, the use of the high, or military, kneeling position is indicated.

Few people realize what few changes are required from one position to the other and in either position, it is important to realize that the physical makeup of one individual almost always varies in some slight detail from another. It also follows that the same exact pattern cannot be laid out for all and that some experimenting should be done after assuming the outline of the position as indicated above.

In the military kneeling position, the principal difference lies in the fact that the weight is distributed about 70%-30% but in reverse, that is, about seventy percent on the left or front foot, and about thirty percent on the right or hind foot, thereby relieving the pressure on the right foot. This should be done by bringing the left foot in until it is at a very slight angle from the perpendicular with the ankle, being slightly behind a perpendicular line drawn directly down through the left knee. This, too, will take considerable experimenting since the longer the legs of the shooter, the farther forward of the foot the knee will be.



It is best to explain what principal advantage the low position holds over the military position. It is simply that the low position covers a wider platform, that is, with the feet properly spaced farther apart, it is possible for the shooter to have less vibration or movement of the gun barrel while actually sighting on the target. With the low kneeling position, there should be no occasion for any shot wider than a nine and due to the much smaller movement of the gun barrel, it is possible to so improve the holding of the rifle that a squeeze approximating that of the squeeze used in the prone position is highly practical.

The size of this platform is best demonstrated by Figure 3. In this illustration of the top view of the shooter, the angle of the left arm with relation to both the gun barrel and the left knee can easily be seen. Since this position is largely one of having all of the body in proper balance, as has been discussed in detail, careful study of all three of the illustrations and particularly study of each individual point from all three angles will be very helpful. I have tried to point out the advantage of considerable experimenting with this position. I would like to clarify this by explaining that by this I mean making very slight changes in the positions of the different parts of the body until the proper balance has been obtained. For example, I said earlier in the article that the left foot should be turned to the right of a straight line continuing out from the leg, which would then help to pull the left knee inside of a line drawn from the ankle to the left hip. Some men find that the left foot should be turned in only one or two inches, while others find it more comfortable and get better results with the foot turned in until it is about halfway between a line drawn through the line of fire and at right angles to the line of fire.

One more point which we have found to be very helpful with shooters just learning the position is to get in the kneeling position as indicated and then with a piece of chalk, to draw a line around the left foot and around the right foot and lower right leg, after which the shooter can get up and rest and attempt to digest all he has absorbed in the first time on the mat. Then, when the shooter gets back down in position, it can be done exactly in the lines which were chalked out, saving the amount of time which was previously spent in finding these positions and devoting the time to other points in the position.

If this article has helped to explain away some of the hocus-pocus connected with the kneeling position, and particularly the low one, and to make more people interested in trying it, then it has been entirely worthwhile. Don't think you are the exception if you find that your right foot goes to sleep after sitting on it a short while. Sufficient practice will make it possible for you to sit on the foot for an indefinite period. I know of many other shooters, as well as myself, who have fired forty shot matches without getting out of this position and still been reasonably comfortable at the end of the string. It's a purely relative case of getting out of this, the same as anything else, just what you put in to it.

If the position shooter is willing to work as hard at learning this game as he is in mastering the intricacies of golf or tennis and will practice as faithfully, he can rest assured that his progress will be as rapid, and profitable, as in any other of the "difficult" sports.

**Fig. 3: This "bird's-eye" view of Wallace's kneeling position shows splendidly the placing of the knee, elbow and rifle barrel in relation to each other**

# THIS VIBRATION BUSINESS

## By J. M. Grigg

### PART II—CONCLUSIONS

In attempting to classify motion an attempt is made to identify it with one of the well-known forms. The so called "vibration" of a rifle barrel may be classed as forced vibration, for the reason that every bend and transverse movement during the critical interval of bullet passage is brought about by the concurrent application of force. Therefore elasticity of the barrel serves merely to temper the degree of bend without a chance to introduce reversals of its own. Further, that during this period the sudden release of strain prerequisite for free vibration is absent is a fact pointing also to a conclusion that the bending is forced.

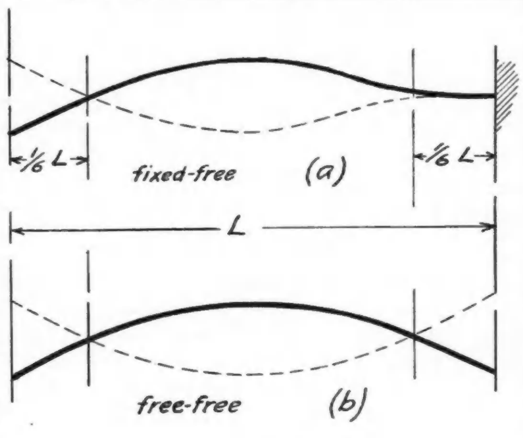


FIG. 4

As to the kind of curve, it may first be stated that a bended barrel should assume approximately the same curve whether the oscillation is free or forced. Therefore to classify the bend it is necessary to make comparisons with the corresponding type forms. So doing, but discounting the fact of overall angular motion while comparing the momentary directions and positions of the curves it becomes evident that the first stage back and forth motion corresponds either to the first mode of fixed-free vibration, or to the fundamental of free-free vibration. These standard forms are illustrated in Figs. 4 and 5.

Which one of these curves fits the particular case depends perhaps upon the clamping principle employed in the particular rifle. The method of clamping that results in Fig. 4 (a) imposes the same basic vibrational restrictions that are found in the design of the two piece stock rifle and also, barring possible exceptions, in the one piece stock rifle. In general therefore the curve (a), Fig. 4, is the curve to which the bending of the barrel of the .22 rimfire approximately conforms. This curve, it is here pointed out, does not differ from the curves of Fig. 4 (b) in regard to length of loop and to position of its one true node, nor does it differ in natural frequency by more than about one per cent.

These conclusions as to form of bend were not accepted without knowledge that discovery of bending in the third mode would annihilate the whole structure that had been built to account for barrel movement. Therefore an attempt was made to find an antinode at the distance 3/14 L from the muzzle, with bend opposite in phase to phase of bend in the middle. This attempt failed with reassuring effect, and insofar as personal opinion was concerned the first mode was a settled fact.

The direction taken by the bullet is intimately associated with the behavior of the barrel. Relative to the rifle it is the direction taken by a tangent to the bore axis at the muzzle at instant of emergence. Relative to the earth the bullet direction differs slightly from this because in general the tangent itself has an angular motion. This angular motion, however, is so small that nearly all the 10.5-minute flip which the test rifle showed in mark shooting is due to fact of the bore axis being humped. Small as the registered curves were it was possible by scaling and calculating from the ordinates of the constructed parabola to approximate rather closely the above named flip figure that was reached by customary methods.

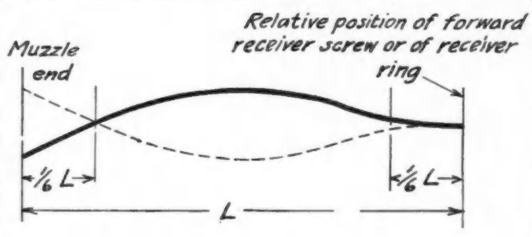

Relative position of forward receiver screw or of receiver ring
Muzzle end
1/6 L
1/6 L
L

FIG. 5

**These graphs illustrate the theoretical behavior of rifle barrels during the time the bullet is passing through the bore. Though generally characterized as "vibration," these movements of the barrel actually are a forced bending or warping caused both by internal forces of combustion and recoil and the manner in which the rifle is supported by the shooter's body**

Variations in the barrel motion, insofar as the present subject is concerned, in opinion of the writer consist mainly of two sorts. These are due (1) to changes in the forces that themselves are the cause of recoil, bending, etc. and (2) to changes in the interference of the shooter himself with these forces. By variations in the barrel movement is meant changes that result in change of impact point.

A theory of shooter interference will be proposed first.

Fundamentally the rifle consists of a mass acted upon by two or more opposing forces which tend, insofar as external interference permits, to rotate it in opposite directions about the center of percussion. These forces are the backthrust of recoil and the downthrust of displaced combustion. The external interference is that which is caused by contact of the rifle with the shooter's hands and shoulder. Obviously the resulting movement, (and of course the point of impact), depends inversely upon both the weight of rifle (moment of inertia) and the degree of interference opposed to the forces. As already implied, variations in the forces themselves occur, but for simplicity in the immediately following discussion it will be assumed that the forces themselves remain constant. That is to say the interference itself will be considered the sole cause of impact change.

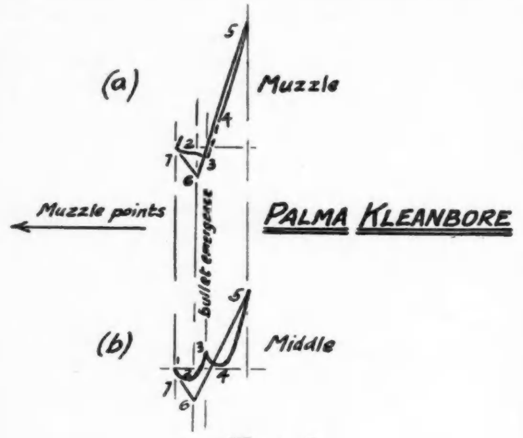


FIG. 6

**Note that this graph of barrel movement follows essentially the same pattern as that published in the January AMERICAN RIFLEMAN, though the latter was made with another type and brand of .22 rimfire ammunition**

In this matter it is obvious that the motions of the free rifle and of the same rifle held in the hands are not the same. The free rifle would recoil about its center of percussion in identically the same manner each time it is fired. The held rifle has its motion *prematurely* and irregularly stopped by shooter interference. A portion of this irregular stopping resistance is applied at the shoulder where the buttstock movement is opposed in proportion to initial pressure and to firmness of the clothing and muscles there. Another portion occurs at the trigger hand and associated arm serves as prop.

Most irregular of all perhaps is the portion of interference that is offered by the other hand and the associated sling pull. That this is true becomes apparent upon consideration of the following. Down movement of the barrel is transmitted, first to stock, then through the elasticity of the glove and hand to arm, and finally through elbow to terra firma. Up movement of course begins where down movement leaves off; therefore the resistance to down movement regulates in considerable degree the throw and in turn the place of bullet impact.

The resistance to down movement, on which the point of impact so largely depends, can scarcely be maintained constant. For one reason the amount of play between the barrel and stock may vary with the amount of contained heat and moisture. Again, the manner of contact of the gloved hand may change slightly in the interest of comfort as continued firing brings fatigue. Still further, the repeated shifting of the body to spot and reload may cause the sling loop to loosen slightly, to compensate for which change the position of the hand must be changed, with the result of course of a different interference.

The resultant change of impact depends upon the amount of motion there is to be stopped. If the rifle be a very heavy small-bore arm, the deviation may be acceptably small no matter how irregular the holding because very little motion is involved. On the other hand, if the rifle be very light, there is too much motion for the average shooter to stop within the allowable limits of error, and he fails to even approach the ideal of frustrating the movement in exactly the same way each time the rifle is fired.

To put the matter in another light it may be said that the forces involved are expended both in overcoming the inertia of the rifle and the interference of the shooter. The inertia part, being dependent upon rifle weight, does not change from shot to shot; so if the rifle is heavy enough then the variable or interference portion is small enough that the per cent of error is acceptable. This is one of the reasons why the heavy barrel is capable of giving a good account of itself.

Impact change that is due to change of force obviously is a result of variation in the manner of combustion itself. But variation in the combustion process is hard to pin down to exact cause for reason that combustion of any nature is always more or less irregular. Therefore the theory which follows, leading as it may into the realm of speculation, must stand on its own merits.

That variations in the combustion process occur is recognized by every rifleman who fires foulers and warmers. One reason for the occurrence of these variations is the loss of heat to the bore walls, a condition which requires that the bore be warmed just as the cylinder wall of an automobile engine must first be warmed. Another reason, far reaching of effect, arises out of a peculiar trait of smokeless powder.

The rate of combustion in smokeless powder depends upon the pressure (or equivalent heat) of its confinement. Therefore such factors as extent of ignition, heat of bore walls, shape of cartridge case, etc., all in relation to the changing space of confinement, complicate the process with a variable interaction and in turn with result of uncertainty as to the manner and place in the bore of the burning.

The frequent occurrence of irregular combustion in the .22 long rifle is easily noted, using as a gauge the loudness of report. A loud report means that the pressure is still up when the bore is opened to atmosphere. That the pressure is still up is probably due to fact of slower combustion, slower either by reason of poor ignition, a cold barrel, or to use of progressive burning powder. The supposition of slow combustion explains why the burning of progressive powder is regularly accompanied by a louder report, and why the first shot from a barrel that has been idle usually sounds louder than those which succeed it.

The part played by ignition is of inestimable importance. In the first place, on the direction and intensity of the ignition blast depends to considerable extent the subsequent distribution and burning of the powder grains.

The rate of combustion depends of course upon the degree or extent of ignition. At the lower extreme the powder may conceivably only squib, and between this and the opposite extreme may occur many gradations of subnormal combustion if the firing pin does not properly indent the primer with sufficient striking energy. Just as a fire built without enough kindling is slow and uncertain so is the weakly ignited charge slow and not at all up and coming like a fire built with plenty of kindling.

It is evident therefore that upon the extent of ignition depends the manner of the succeeding conflagration, and in turn the distribution of gas and pressure along the bore. In turn again on distribution of pressure depends very largely the total behavior of the rifle, and most important of all the place of bullet impact.

The place of bullet impact is involved for one reason that the muzzle velocity depends to some extent upon the distribution of pressure along the bore. This it does because the energy content acquired by the bullet depends upon the integrated product of pressure and time, a sum that would attain its maximum for a given area under the pressure curve if the latter could be turned end for end. Therefore terminal pressures are boosted at the expense of breech pressures to the same extent the muzzle velocity is augmented. This is the principle involved, and it leads to change of muzzle velocity when a different manner of combustion leads to a different distribution of pressure.

But a variation of muzzle velocity is not all. There are other faults that result of uneven combustion. For one, the recoil varies in about the same way that muzzle velocity does, and this in turn results in change of impact point, as one must believe after observing that the registered movement of the rifle varies according to the manner of interference at the buttstock. In this light it is understandable why the shot of loud report strikes in a different place.

Another result of irregular combustion is an irregularity in the cycle of movement to and fro that is described when the rifle is fired. This irregularity of cycle, being as it is a matter of time and amplitude change in the to and fro motion, results of course in inability of the rifle to shoot to a single impact point. This effect as in the case of uneven interference is the same as if the barrel vibrated in haphazard fashion according to the popular notion.

As in the case of uneven interference if the barrel is quite heavy little change is noted on the target for the reason that the proportionate mass and stiffness of the heavy barrel render it comparatively insensitive to variations in combustion force. On the other hand if the barrel is too light it responds to these variations of combustion, probably walks its shots up and down the target, and in .22 long rifle target shooting may fail dismally with progressive burning powder.

The subject of heating might be elaborated to include diverse other effects. But as these, whether due to sun or firing, have little if any bearing on the motion of the barrel their discussion is omitted, because as Kipling is quoted, "That is another story." Nonetheless their understanding is often of serious importance to the outdoor marksman, involving as it does such matters as rate of radiation and absorption, warp of barrel and sight line, fit of barrel and receiver in the stock, and perhaps change with temperature in the characteristics of the barrel metal itself.

All in all the matter of so-called vibration is summed up as merely a theoretically predictible case of force and reaction, or of cause and effect. The cause is the force generated by powder combustion; the effect is the movement and bending of the barrel, not only against its own inertia and elasticity but also against the resistance to movement offered through contact with the shooter's hands and shoulder. If combustion force and shooter interference remain constant from shot to shot the barrel moves in precisely the same way each time it is fired; for like causes produce like effects. Conversely, if the conditions change the result changes; and this change, provided it is not due to one of the various other maladies to which the rifle is prey, is the change popularly ascribed to vibration.

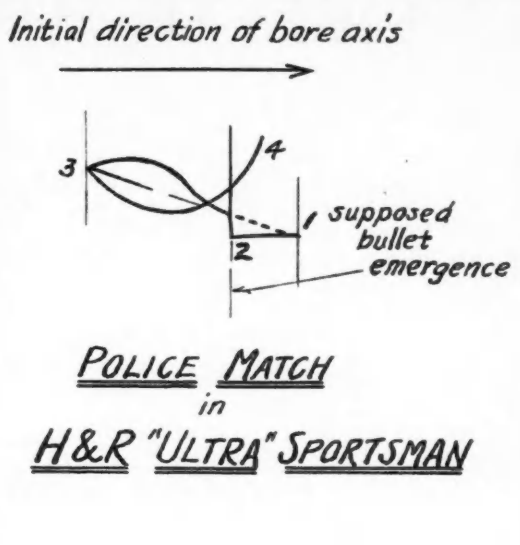


FIG. 7

**Police Match .22 ammunition in Harrington & Richardson's "Ultra Sportsman" revolver produced the barrel movements recorded above. Basically they tell the same story of movement as those recorded with rifles**

The to and fro barrel motion is simply the resultant of resistance to concurrently applied force. Though cyclical it is not rhythmic; though changeable is not haphazard. Only the conditions are haphazard; the results themselves are in accord with natural law.

Thus in the opinion of the writer is the explanation of so-called "barrel vibration." As to proof much circumstantial evidence may be found. For example, a Savage 19 shoots one minute *lower* when a Vaver light shade weighing a few ounces is attached; a Marlin 39 with a pound and half of lead taped to the muzzle end shoots four minutes *higher*. But as such evidence necessarily *is* circumstantial the arguments heretofore advanced must stand on their own merits.

**A TIMELY SUGGESTION — Your copy of THE AMERICAN RIFLEMAN will bring pleasure to many a fellow shooter if you send it to the nearest training camp or USO center after you have finished reading it. The boys may be out of the game for a while, with a more serious job to think about, but they'll appreciate the chance of keeping up with the latest shooting news through RIFLEMAN pages. If you don't know any gun-loving trainees personally, address the magazine to the camp chaplain. He'll pass it on.**

# MORE SIGHTING-BAR DOPE

### By Major George Van Orden, U. S. M. C.

DETAILED PLANS OF THE Winter Sighting Drill Target appear with this article. The entire device, with the exception of the mirrors, can be made of scrap found on any rifle range: target frame uprights; pieces from surveyed steel wall lockers; sections of M1903 rifle mainsprings; wing nuts and some of the angle bolts from ammunition cases. The only trick is to arrange the rifle clamps so that they will securely hold the rifle to the bar, and will not permit the rifle to be displaced when the pupil gets into a firm position behind the rifle.

A sufficient number of Winter Targets will be available when there is one on the range for every rifle target that will be used by any one firing group. For example, at Quantico, the greatest number of targets on any one rifle range is forty-four; hence, we have forty-four Winter Targets on the school range.

The time to begin Winter Sighting Drills is immediately after the school range lectures on sighting and aiming. Do not let any man proceed to position training until he has turned in a satisfactory performance on the Winter Target. However, once basic instruction has been completed in sighting and aiming, the men may be returned to Winter Drill at any time.

As many as six separate exercises may be performed on the Winter Targets. The instructor should explain and demonstrate each exercise in sequence, and then have the men perform each of them in order. Instructors should closely supervise the exercises on the first go-round; after that, leave it up to the men.

#### Exercise No. 1—Correct Sighting and Aiming

The instructor shows the assembled students a series of prepared cards which illustrate correct sight alignment. The first is a picture of the peep sight; the second, the peep and front sight aligned; the third, the peep, front sight and bull aligned, and, if training with the M1903 Rifle, the battle sight, front sight and bullseye or rapid fire figure aligned. He then demonstrates how to mount the rifle on the Winter Target bar and cautions that the clamps are to be set up tight so that the rifle will not shift its position when the shoulder is placed against the butt. He then mounts the eyepiece on the rifle and explains that the eyepiece is used to enable the coach and pupil to see exactly the same picture when looking through the sights: here is the time to speak of the necessity of holding the eye exactly the same distance from the rear sight for successive shots when firing on the range. He then explains that the rifle is now pointing into the mirror at the end of the bar and that the mirror will reflect the sight picture created by the position of the eyepiece. He now explains that he will cause the sights to appear in correct alignment by moving the movable arm of the eyepiece. Having aligned the sights by moving the eyepiece, the instructor stands aside and has the pupils look at this "Correct Sight Alignment". During this exercise, the yoke and sighting target are swung out of the field of the mirror.

#### Exercise No. 2—Sight Alignment Exercise

The instructor has the pupils set up their rifles in the Winter Target and attach the eyepieces. The pupils then align their sights and, when ready, stand aside until the alignment has been checked by the instructor. After the instructor has checked the alignment and is satisfied, he throws the sights out by moving the eyepiece and has the next man perform the exercise. After the first go-round, the pupils check each other.

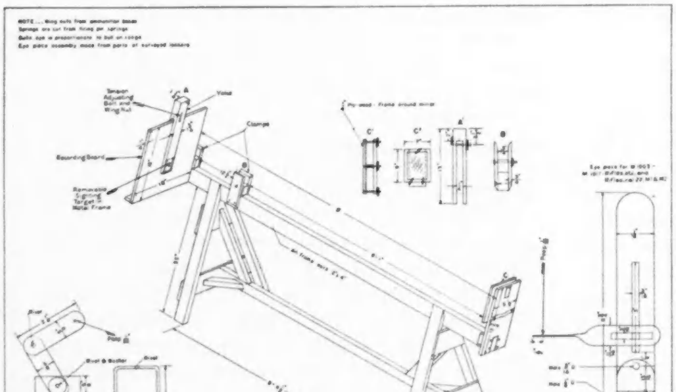
#### Exercise No. 3—Aiming Exercise

With the sights and eyepiece in alignment, the instructor moves the yoke carrying the sighting target into the field of the mirror and places the sighting target so that the front sight is tangent to the bullseye at 6 o'clock. At first, use a sighting target having a bull which has the appearance of the "A" target at 200 yards. When correctly aligned, the instructor stands aside and has the pupils view the correct aiming picture. The instructor then requires the pupils to duplicate the aiming picture.

#### Exercise No. 4—Dotting Practice

The recording board is prepared for this exercise by mounting a piece of paper on the side nearest the shooter. Use Scotch tape or adhesive tape to attach the paper to the board. Line up the mirror so that the sights will appear to point at approximately the center of the recording board. Now, with the sights and eyepiece in alignment, the instructor explains the necessity of aligning the sights on the target in exactly the same manner every time a shot is fired. He states that the next exercise will demonstrate whether or not each man is able to align his

**Construction layout of the Winter Sighting Bar**


Tension Adjusting Bolt and Wing Nut
Yoke
Clamps
Recording Board
Removable Sighting Target in Metal Frame
A
B
C
C'
Rivet
Rivet & Bushing
FRONT VIEW
TOP VIEW
Eye piece for M1 Rifle, B.A.R. Johnson R.Rifles, etc.
Eye piece for M1903

sights on the bull the same way every time he aims. The instructor aligns the Sighting Target bull on the correctly aligned front sight; when in position, with the point of a pencil rotated in a hole in the rear side of the yoke, he makes a dot on the paper. He then swings the yoke out of position, moving the Sighting Target bull off the front sight; he then moves the yoke so that the Sighting Target bull again becomes aligned on the front sight, whereupon a second dot is made on the paper. The exercise is repeated until 5 *consecutive tries result in superimposed dots.* No error is permitted.

The pupils then perform the exercise. When they have made 5 consecutive superimposed dots, they stand aside and the instructor checks the sight picture to see that the pupils are still using the correct point of aim and sight alignment.

### Exercise No. 5—Advanced Dotting Practice

Remove the eyepiece from the rifle. Correct sight alignment is now obtained by moving the eye in a vertical plane the same distance from the rear sight at all times. With the sights in correct alignment, correct aiming is obtained by moving the yoke with the right hand, which causes the target to move *onto* the sights. Repeat Exercise No. 4 until 5 tries result in superimposed dots.

### Exercise No. 6—Battle Sight Practice

Using the M1903 Rifle with the eyepiece on the rifle and using the *battle sight,* have the pupil show the instructor correct sighting and aiming on such targets as the rapid-fire at 300 yards; a man crouching behind a bush at 250 yards; a four-length lead on a dive bomber. When the instructor is satisfied that the pupil knows the correct aim, he will have the pupil remove the eyepiece and proceed with dotting practice on these combat targets.

In addition to the six basic exercises in sighting and aiming with rifles, weapons instructors will find many other uses for the Winter Sighting Drill Targets in teaching sighting and aiming with other weapons. For example, with sight modifications, the Winter Target will be valuable in pistol or machine gun sighting drills.

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# A MILLION MEN A MONTH

*(Continued from page 4)*

rifle and point out to him the few parts with which he needs to be familiar in order to load and fire the piece,—the barrel, receiver, bolt, trigger and sights; the stock, fore-end and butt; the butt plate and the sling swivels. I open the bolt, showing the magazine, explain how it works, and show him how the gun is loaded and unloaded. (Yes, there *are* many other parts of the rifle listed in the nomenclature, but Brown will learn about them eventually and he doesn't need to know about them in order to intelligently load and fire the rifle. We carefully avoid anything which may confuse him at this stage of the game and thereby delay our instruction.) While I still have the rifle in hand, I caution him with regard to fundamentals of gun safety. I tell him that only tyros handle guns carelessly and that the mark of a real rifleman is the care with which he handles a firearm. I caution him about careless muzzle-waving and point out why something unpleasant will happen to him if the bore becomes obstructed. (Brown is anxious to be known as a good rifleman. He doesn't want to be instantly spotted as a "dub" in the company of other riflemen, and my little talk on safety is remembered.)

Then I hand the gun to Brown and have him name the essential parts and tell me the fundamental rules of gun safety. Then I take him to the Winter Aiming Device (described in the January RIFLEMAN, with working drawings in this issue) and let him get the sight picture firmly in his mind as he makes two or three sighting triangles. Then I show him how to get into the sling and explain why it helps to hold the rifle steady. Next I place him in a comfortable prone position behind the sandbag rest. The sandbag, of course, gives him a perfect hold and gives him the confidence which is so important at this stage. I explain that there is only one thing more to becoming a good shot—which is to release the trigger without disturbing the sight alignment. I explain the trigger squeeze and point out the necessity of "following through," of keeping the eyes on the target until the bullet has reached its destination. I explain how important this is in field firing because if the first bullet misses and I can see the puff of dust or the crumbling leaves which indicate where the bullet struck, I can instantly correct my hold and get in another shot which *will* find the target. If I can get Brown to concentrate on this follow-through, I have probably eliminated any chance of his flinching.

Then I instruct him to carefully aim and "dry fire" a few shots to get the "feel" of the gun. If I have an aiming device I use it to check his aim.

Next, I explain to him that he doesn't need to worry about recoil so long as he holds the gun properly. I tell him we will fire a few rounds, but that I am going to load for him. Brown doesn't know whether the rifle is loaded or not. If he flinches, *I* see it and *he* sees it. If he doesn't flinch, he gets hits in or close to the bullseye. Then I permit him to load and fire a few shots himself. If he still doesn't flinch, he makes a respectable score, he is a practical shot for our purposes, and the question of how much further he goes as a rifleman is up to him. He knows he can hit a man just about as far as he can see him under normal battle conditions, and this is a great aid to his morale. I have done all I can do for Brown, and I have done it in less than two hours!

If this program seems over-simplified to you, I can tell you from personal experience that the plan works. I have used it on Regular Army and on National Guard Divisions. As a matter of fact, using this very plan, one National Guard Division obtained the highest percentage of qualifications that it had enjoyed up to that time.

I have been a member of the National Rifle Association and have believed in its work since long before the birth of many of the men who are now being called to the Colors. I know that our Association, without help from anyone, can produce a million good marksmen a month, and I know from experience in the Spanish-American War and the World War that no organization could make a greater contribution than this to the national defense.

# Any Alibis?

## ARE WE MISSING A BET?

On the sidelines during one of the large Regional shoots this past summer, I counted over 20 really fine pistol marksmen who were not taking part in any of the matches. Asked why they were not shooting, the replies were so similar that I believe they hold one answer to the problem of making our competitions attractive and providing real sport for a greater number of those interested in our game. Although the wording differed somewhat, these men, doctors, dentists, lawyers and businessmen, summed the matter up by saying: "No, I haven't given up shooting, I enjoy it just as much as ever but I simply haven't time enough to practice the kind of shooting you do nowadays to make any kind of a score. Slow-fire with a single-shot is about all I can handle."

Now I personally haven't any criticism of three-stage shooting. It is a good sport, has variety and does make for more all-around ability, but like these men, I had to give up all thought of competitive shooting long ago because it requires more practice than I can possibly find time to do. The fact is, as a sport is made more complicated, the number of participants is bound to be reduced, simply because of a lack of time for the required training. Three-stage shooting is undoubtedly more practical than out and out slow-fire, but even so don't we want the men who can only find time to practice slow-fire to take part in our tournaments?

Of course it is true that we have slow-fire matches in our tournament programs now and many believe they should give slow-fire shooters all the opportunity needed. In a way that is correct, but these matches are for the guns used in the timed- and rapid-fire matches also. I am talking about something a bit different, for what most of these pistol shooters want is a worth-while slow-fire match for single-shot pistols. Most of them began their shooting with such a gun and anything of any less accuracy will not satisfy them. In fact, I believe we should recognize the single-shot as a handgun of special merit and have a real match for it. That there is ample opportunity for an improvement in scores can be easily determined by just looking over those made at the Olympic meets.

Think of the proposed match therefore, not as one that will simply *allow* a single-shot to be used, but one which will make it the logical gun because of the superior accuracy possible with it. There is no use of a target on which just as high a score can be made with a 4 inch barrel automatic pistol, for that is not the kind of shooting a real single-shot shooter wants. Statements that the scores being made on the standard American target prove that the .22 automatic pistol will produce just as fine results as the long barrel single-shot sound highly ridiculous to anyone familiar with the relative machine rest accuracy of the two guns and with the kind of groups made by men really able to shoot the special target gun.

As a starter, therefore, let us adopt the International Target for our proposed single-shot match. That target, with its 2-inch ten-ring, will bring out the capabilities of the target pistol and it will also settle the matter of the accuracy of the single-shot as compared with that of the automatic or the revolver. At the start many shooters not in practice with the single-shot will probably find that they actually can shoot better scores with the gun with which they are more familiar. Consistent scores would not be made until real skill had been developed with the only gun capable of the kind of accuracy required.

My second suggestion is that we remove the arbitrary restrictions now imposed on the single-shot. Why, for instance, should the trigger pull be limited to two pounds? With the single-shot we are playing a game in which maximum accuracy is the one and only end sought. Perhaps some will find that they can shoot better with a two or even a five pound pull, but others will find that they do their best work with a one or one and one-half pound pull. All right, let's leave it up to the man.

The third item has to do with the restrictions now in force regarding the sights. I wish someone would please tell me why we should insist that the rear sight must be in front of the hammer. If, in that position, it will give greater accuracy than if placed anywhere else, no rule is needed to keep it there, but if a shooter can do better work with the rear sight back of the hammer, why shouldn't he be allowed to have it there? One thing is certain, it won't be worth-while to try to interest single-shot pistol marksmen if we deliberately limit the capabilities of the gun. Let it be a match where each shooter can use whatever gives him best results and we will have something worth-while.

Let's just suppose we established such a slow-fire match as a part of our program, not however as part of the shooting required to win one of the trips to Perry, but just as a match for those who like super-accuracy and slow-fire. Perhaps the entries for a year or two would be small but any additional entries are worth-while, for they prove that our program is doing what it should do, namely, provide sport for the largest possible number. Gradually a group of shooters will be built up—men who in all probability would otherwise drop out of the game entirely. These men are the ones who have little time for play and for them the single-shot and slow-fire offers the ideal kind of recreation. They can go to the range whenever they have a spare hour, put up a target and get enjoyment and relaxation without needing any range attendant or other competitors. Such men could not possibly take time to develop skill in timed- and rapid- as well as slow-fire with a .22 pistol to say nothing of the revolver and the .45.

There is still another reason why the really fine single-shot pistol will have a strong appeal to many shooters. It is the same quality that has made the miniature camera so popular and can be described as both pride of ownership and the satisfaction most people get from using a really fine tool. Remove the modern refinements, fast lenses, range finder, exposure meter and all the other gadgets from the miniature camera and it would be simply an old-time "pocket camera" and lose its tremendous appeal. The finely equipped single-shot would have exactly the same appeal. Give the single-shot the fittings needed to permit anyone, willing to learn to use them, to make scores such a gun can produce and it would have the same appeal as the fine camera and become the most highly considered target arm of all.

# The Old Coach

## RIFLES IN WINTER

MY OLD FRIEND HAROLD LOKKEN had over forty-five years of *continuous* hunting in the Yukon. He went there in the gold rush of 1898 and except for several short trips to the States he remained there hunting all his life. He was well-educated and well-read and was able to keep himself equipped with the finest and most modern rifles and equipment, as well as membership in the N. R. A. In addition he was an excellent shot and an accurate observer. The year before his untimely death he was back in the States, and at a friend's house, one infernally hot June evening our talk settled on the use of rifles in winter. I think this month is a very proper one to pass along what he told me.

In below freezing weather a rifle and its ammunition, and particularly scopes and binoculars should never be taken indoors. If brought into a warm room when very cold, moisture will condense all over them and they will be as wet as though they had been dropped in the creek. The rifle can be warmed, rubbed dry and oiled in a few minutes, it is true. But scope and binoculars must be dried very slowly by mild heat of the room away from the fire to avoid injury, and this may take a whole day with always a danger of rust.

A rifle or any article of steel will not rust, even though the bore be fouled, when left outdoors, so long as the temperature stays below freezing. At such temperature there is no moisture in the air, and moisture is needed to cause rust, even rust from the fouling of older primers.

The breech mechanism and the bore must be kept free from any oil or grease—kept wiped dry. Dry particularly the trigger mechanism which is often neglected because it is hard to get at. Oil and grease congeal at low temperatures and freeze the rifle up tight so it will not operate, and often cannot even be opened or the trigger pulled.

Moisture which freezes on the rifle will also do the same thing, and you may often experience moisture even in the most severe winter climate. It may thaw and start to rain or sleet. If this happens, your rifle gets wet, then freezes up. Or your rifle may have a little snow on it here and there, particularly around the bolt, and carrying it on a bright sunny day it may warm enough in the sun to cause the snow to melt. Soon you get out of the sun and the rifle freezes up. Nothing to do but stop and build a fire to thaw it out.

For this reason Whites and Indians alike in the Far North habitually carry their rifles in a case, usually a light canvas or moosehide cover with a fastener or flap that can be opened quickly with gloved hands. A zipper fastener of all things should be avoided as it freezes up on the least provocation.

Traveling with dog sled is particularly hard on a rifle. Under these conditions food for men and dog alike are liable to be scarce and the musher always wants his rifle where he can get at it quickly to shoot any game that might be met on the trail. So he carries the rifle on top of the sled under the lash ropes. But in traveling over rough country the sled can be counted on to upset many times during a day's journey, and the rifle if unprotected will get filled with snow at least, if not otherwise damaged. If the bore does get plugged with snow and the rifle is then fired the barrel will burst. To protect his rifle on the sled Lokken had a heavy sole leather scabbard, like a saddle scabbard, which covered the whole rifle including the butt. The opening closed with a spring, like the spring on a revolver shoulder holster.

When the thermometer gets down to about 30 below or colder, the rifle, or any metal object, must never be touched with the bare hands. The skin will stick to the steel, and when the hand is pulled away the skin will remain on the steel. The only jam that Stefansson, the arctic explorer, had with his Mannlicher-Schoenauer rifle in ten years of hunting in the North was caused in this manner. He thoughtlessly removed his gloves to shoot a polar bear. After the first shot the rifle jammed. Examination showed a raw place on his thumb, and a big piece of skin tightly stuck to the body of the bolt. In extremely cold weather, when expecting to have to shoot, wear silk gloves under fur gauntlet mitts. The mitts are tied together by a thong which passes over the shoulders so they can be jerked off (with the teeth) at any time without losing them. Except in extreme cold the gloves and mitts will keep a traveling man's hands warm. A rifle cannot be handled or shot well in thick woolen gloves, but can in silk ones. Of course at the present writing silk is not available. Perhaps we will capture some pretty soon.

A telescope sight to be used in extreme cold must have a very long eye relief, and must be mounted far forward on the rifle. The warmth of the eye and face, when they are held within two or three inches of the eye lens will almost instantly cloud the lens over with a film of moisture that cannot be removed until the lens is warmed. Lokken found for this reason that the best hunting scopes for the North were the Noske, the Zeiss Zielklein and the Lyman Alaskan, all of which have very long eye relief.

It is generally supposed the velocity of cartridges is lower in very cold weather, and that a rifle shot in the cold shoots lower, and requires a higher elevation of the rear sight. Probably this is true to a certain extent, just as a fly alighting on a thick iron bar will bend it to *a certain extent.* But evidently the effect is of no consequence from a practical point of view. Lokken said that he had seen a statement that higher elevation was necessary in extreme cold, and he started to find out about it. First, at 200 yards he shot a group of ten shots from his cabin window with rifle and ammunition at cabin temperature and sights at summer elevation, but with outdoor temperature about 50 degrees below zero. He obtained a normal group at the normal place on the target. Next, he exposed rifle and ammunition outdoors for 48 hours at a temperature around 50 below, and again fired a group of ten shots at 200 yards outdoors. This group, on the same target was right in with the other group, apparently showing that cold had no practical effect on center of impact at 200 yards. Another friend of Mr. Lokken's and I are unable to recall now if this shooting was done with a .30-06 Remington, or a .270 Winchester rifle—it was one or the other.

Keep your rifle dry, and your hands warm, and your THUMBS UP.

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# N OF RIFLEMEN CALLS
# N UILT EQUIPMENT

RIFLEMEN have observed with keen satisfaction the marked increase in the number of Americans who have turned, during the past year, to the sport of competitive rifle shooting.

This has been especially notable among the younger generation. It reflects the spirit of the times and of America—the demand for real, red-blooded sport in the tradition that has always been genuinely American.

These new shooters—and, as well, those who have long enjoyed and loved this finely competitive sport—are vitally concerned that their training and practice shall be conducted in just the right way to get all the pleasure and benefit that shooting holds for them.

Competitive rifle shooting requires precision training. That's one big reason why it offers so much to those in every walk of life who master it.

Precision training requires equipment that is truly precision-built. Perfection, or approach to it, is only possible with equipment that is so made as to permit the fullest development of the skill of the user.

Winchester Model 52 has proved its supreme efficiency for such training. It is the product of precision-minded engineers working with precision tools to effect precision results. Precision EZXS have long teamed successfully with the Model 52. This combination—fullest development of Winchester's 75 years of "knowing how"—fits the needs of precision training in target shooting with engineering exactness.

Built to give American riflemen the utmost in target shooting efficiency, this Winchester combination stands as a supreme answer to this exacting requirement.

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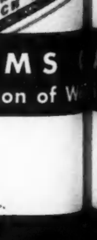

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# POWDER SMOKE: READERS COMMENTS THE NEWS DESK

## RE-LOADS . . .

### MILL VALLEY'S PROJECT

In response to an appeal from the Women's Coordinator of Marin County, California, the Tamalpais Revolver Club opened classes December 29 on the Alto Indoor Range for the instruction of all citizens in the safe and proper handling of firearms and defense shooting.

Forty-five registrations were made and great interest is being shown by men, women and high school boys.

The Tamalpais Revolver Club is furnishing instructors from the members who are Master and Expert shooters as well as the use of the range, targets and, so far, even ammunition. Persons entering the instruction classes are requested to bring firearms in their possession in order that they may be checked mechanically and instruction will be given for the care of the gun. Also, the beginners are being warned against the use of corroded ammunition—i.e.—all safety measures are being greatly emphasized.

Mrs. E. C. Engelhart, wife of Colonel E. C. Engelhart who is with the U. S. Army in the Philippines, has volunteered her services for morning classes for women. Beginning January 5, Mrs. Engelhart, will be at the range from 9:30 until 11:30 four days a week. In 1940, Colonel and Mrs. Engelhart were at Camp Perry and Mrs. Engelhart received her certificate from the small arms school. She plans a course similar to the one given there.

The Tamalpais Revolver Club has held beginners' classes for over a year each Monday night. These classes were open to all citizens over 18 living in Marin County and attracted quite a large number of interested shooters but only those wishing to do target work or competitive shooting.—Frances L. Wadman, Mill Valley, California.

*The Tamalpais Revolver Club civilian training project is similar to many others that have been worked out by N.R.A. clubs in nearly every state, most of which have been reported to us. However we think the work and cooperation of Mrs. Engelhart is significant and worthy of notice especially since her husband is among the gallant defenders of the Philippines.*—Ed.

### BRITISH RIFLE TRAINING

We British are always interested in sport, even in War Time. I have always found that marksmanship is helped if you encourage the soldier to look upon rifle shooting as a sport. It is not easy to get sufficient spare ammunition for the .303 or .300 shooting, but .22 is usually available.

One of the first things I did when I assumed command of my Company was to organize a .22 rifle shooting team championship for the whole Battalion. A challenge Trophy was presented by the Commanding Officer, and the competition was run every two months. My Company won the championship upon each occasion except one, but that did not prevent each of the five companies trying hard to win. My C. O. said the results were only to be expected. No commissioned officer was allowed to take part in this event.

I then organized an Individual Championship for the Battalion, open to all ranks. The Lord Lieutenant of the County gave a challenge Trophy for this. I am the present holder of that championship. To help other units my next competition was a league for teams from all units in the district. Ten Teams entered, and included one from the Home Guard, A.T.S., (women), Civil Police, Division Headquarters, and a team from each of the other Regiments. Matches were all shoulder-to-shoulder, and aroused keen interest and marksmanship improved with each match. When one tournament was completed another was started, and no one who took part in the previous shoot was allowed to shoot again.

In other districts many rifle competitions are taking place, but mainly by members of the Home Guard, and civilians. The idea of rifle shooting on a competitive basis is commended to the U. S. A. Army authorities as a means of promoting more social life amongst soldiers, and also helping the marksmanship.—A. B. McKenzie, Captain, Stirling, Scotland.

### DEFENSE-MINDED CLUB

Gunlovers, hunters and marksmen may well prove to be the backbone of America's vital defense. Thus it appears more than imperative that we should continue to face and endeavor to master the struggle to bring organized shooting under proper and safe supervision to the fore. Today it certainly becomes more than just a sport though it must remain so if it is to expand and thrive.

The Douglas Rifle and Pistol Club, Inc. has commenced the current season quite aggressively and the future promises of unprecedented success despite the certainty of higher taxes, shortages, priorities and prolonged and desperate war.

During and prior to the last hunting season we conducted regular practice sessions open to anyone. We encouraged anyone with a firearm to bring it out and sight it in prior to the hunting season—with the promise that we would help each and every one and laugh at no one. This produced considerable interest in our club among the populace—there was a welcome response among the gun lovers, hunters and curiosity seekers.

Immediately following the hunting season we held an inter-club match with a club from a neighboring town. This brought out most of our active members. We advised them that the following week we would hold our annual election. With this stimulus the meeting was well attended:

1. We elected officers for the coming year.
2. We moved to make dues payable October 1st to October 1st.
3. We moved to sponsor a ladies' auxiliary rifle club.
   a. They must meet and fire separately.
   b. Men with Camp Perry experience were designated as coaches.
4. We moved to cooperate with the boy scout troop and train any youths desiring

*(Continued on page 43)*

## TIMED FIRE

### *With Bill Shadel*

**Rifleman in combat:** World War II, at least for the few weeks of U. S. participation, has already produced its first American rifle hero. Lieutenant William Porter, like a Sergeant York, caught in the focus of newspaper reporting, becomes an ideal to those who still believe in the effectiveness of "the man and his rifle". No veteran by any means, nor steeled to the horrors of actual combat . . . merely a lad just out of college . . . getting his first shock of death-dealing bursts . . . from tanks, dive-bombers, machine guns . . . transformed within a few hellish hours into a seasoned soldier . . . cool, deliberate, calculating . . . as deliberate as the day he set out to win his first intercollegiate rifle medal. But this was a man-sized job cut out for him. The American and Filipino troops withdrawing south to the river . . . to the bridge they hoped was being kept open for this very crossing . . . but the bridge that the little yellow men had already covered with a machine gun crew . . . collegiate-trained rifleman Porter saw a few of his men take the first burst and go down . . . saw the flashes from a carefully concealed Jap nest . . . his ten-ring for the next few minutes . . . easier now than those ten-rings in college . . . these little Japs still made big targets . . . that is, when they could be seen . . . the rifle still counts? . . . well, a Jap a shot, slow fire . . . that's some consolation . . . until that whole crew is wiped out and the bridge kept open . . . without men falling as soon as they started across. A withdrawal made safe with the wholesale shot-by-shot clean-up of a Jap machine gun nest by lone rifleman Porter. Untold was the story of Lt. Porter's cool confidence founded on his target shooting days in college. It all sounded like one of our riflemen . . . one of the boys who had taken his marksmanship seriously. Here's the record. Outstanding cadet of the Reserve Officer's Training Corps unit at New Mexico College of Agriculture and Mechanical Arts from September 8, 1936 to May 23, 1940; Rifle team, 1936-37; Gold medal for Eighth Corps Area National Intercollegiate Rifle Championship, 1937-38, 1938-39; commanding platoon in outstanding company in all competitions, 1939-40.

**Rifleman in training:** From South Dakota. "Just about a year ago we had a young man join our club under my personal invitation and yesterday word from this young man, who joined the Marines five weeks ago, tells me that he made the highest rating of his platoon in rifle shooting and has been chosen as instructor in the department and will remain at the San Diego base. Results such as these are, no doubt, duplicated all over the country."

# NEW BOOKS:

## "THE FINISHING OF GUNSTOCKS"

*By* Alvin Linden

In this second of the Linden-Samworth series on the niceties of gunmaking, Alvin Linden lays bare all of the tricks of stock finishing he has acquired in his years as a top-flight mechanic of the shooting game. Not satisfied, the "Old Skratch," as he is referred to in the captions, proceeds to blow higher than a Jap's opinion of himself many of the fallacies of the art of slicking up a rifle stock. Crammed between the yellow-and-green covers is a veritable bonanza of information on the "simple" matter of putting a "hand-made" finish on a stock, at which the "Sage of Bryant" has justly gained quite a name for himself. In all, Linden fills 46 pages (Rifleman size) with formulae, directions and homely philosophizing on the subject—enough to turn out an expert stock finisher at one reading.

Folded in the wrappers are two more of the big wall-size charts of the sort that accompanied the first Linden booklet on the inletting of gunstocks. These show, in full size, three Linden remodeling jobs on the M-1917 Enfield, complete to checking patterns and bedding shortcuts. The beauty of these big sheets is that, being actual size, measurements may be taken directly from them, making the layout of a stock blank to the proper dimensions as simple a matter as reading a blueprint. This fellow Linden certainly hit a jackpot when he dreamed up these charts—they're that good!—John Scofield.

*"Firearm Design and Assembly; The Finishing of Gunstocks and Conversions of the 1917 Rifle." 46 pages, illus., $2.10. May be ordered from the N.R.A. Book Department.*

## U. S. NEEDS DEPUTY MARSHALS

The Civil Service Commission is announcing a Deputy United States Marshal examination, offering an opportunity for service with the Government under the Department of Justice. The duties of the Deputy Marshal will be to serve civil and criminal process, make arrests, transport prisoners and carry out similar tasks.

The experience required is such as that acquired as a Federal, State or municipal police officer, county sheriff, full-time constable or bailiff in United States District Courts. Persons may also qualify who have had certain legal or college training or who have had a combination of the experience and education.

Building and jail guards and night watchmen are not qualified on that experience alone. Persons meeting the requirements must have their applications on file with the United States Civil Service Commission not later than February 16.

## RIFLE AND PISTOL FILMS

Many requests have come in recently for information about films for club dinners, meetings and shows. For those who have entertainment or instruction problems we are listing the three now available. (1) Fundamentals of Rifle Marksmanship, 4 reels, 16 mm., $1.25 per reel. N. R. A. members and clubs may keep film a week. (2) Pistol Bullseyes, 3 reels, 16 mm., $1.25 per reel. N. R. A. members and clubs may keep film a week. (3) Shooting Holidays, 2 reels, 16 mm., color, $1 per reel. N. R. A. members and clubs may keep film two days.

## NEW JUNIOR TOURNAMENT PLANS

The year 1942 will see the greatest single development in the N. R. A. junior program since its beginning sixteen years ago. During those years junior teams have been accustomed to competition on a postal basis. Now those teams representing high schools and similar schools will have the opportunity to compete shoulder-to-shoulder for National and District Team and Individual Championships. On April 18, 1942, a series of tournaments will be held throughout the country to select the 1942 Scholastic Champions.

Any junior club, college club, senior club or state association affiliated with the National Rifle Association may apply for the privilege of conducting the tournament for each district. It is naturally necessary that the sponsoring group be able to furnish adequate range facilities and personnel to successfully conduct such a tournament. It is also required that teams representing at least three separate schools be assured. Awards, targets, publicity, referees and complete instructions will be furnished by the N. R. A. To assist sponsoring organizations in defraying expenses fifty percent of all entry fees will be returned to them to be added to their general funds. Complete information may be obtained from the Junior Division.

## JUNIOR QUALIFICATIONS CONTINUE

A recent announcement in these pages stating that the Distinguished Rifleman qualification award would not be available after the first of 1942 referred only to the now-obsolete *senior* qualification course. This course of fire was replaced by the present senior qualification course consisting of Marksman, Sharpshooter and Expert stages—eliminating the Distinguished Rifleman award to shooters qualifying as Expert for three separate years. All Junior qualifications continue without change under the requirements as outlined in the 1941 issue of the Junior Rifle Handbook.

## LUGER-MAUSER PISTOL RULING

"A Luger or Mauser semi-automatic pistol which is equipped merely with a lug, spur, slot or other device for the attachment of a shoulder stock is not a 'firearm' within the meaning of section 2733 (a) of the Internal Revenue Code. In order for such a pistol to constitute a 'firearm' as defined in that section, there must be an accompanying shoulder stock with which the pistol may be used."

The above ruling, quoted from Treasury Bulletin S.T. 923 (1941-48-10914) revokes a previous Treasury Bulletin S.T. 908 (C.B. 1940-2, 342), which ruled that such a pistol was a "firearm".

## DIRECTORS MEETING

**The annual meeting of the Board of Directors of the National Rifle Association will be held at the Mayflower Hotel in Washington, D. C., on Friday afternoon, February 6. The meeting is for the purpose of electing officers and transacting other business. Following the afternoon business session the annual directors dinner will climax the occasion.**

## RELOADS—*(Continued from page 42)*

to earn the scout badge for marksmanship.

5. We moved to purchase Blackinton medals for a three weeks' competition open to men below the Expert class.

Results? Yes, they have been ample and encouraging!

Early election of officers and payment of dues permitted the club to launch and plan its program at a date sufficiently early to bring in new members with the thought that they would be able to fire until April for dues paid now. Ready cash in the bank sufficient to purchase much needed equipment and support club activities. An early club report to the National Rifle Association and Office of the Director of Civilian Marksmanship. To obtain new members we only had to contact those who had been out to our fall .30 calibre practice sessions.

As for the ladies. Under this coaching they became more readily interested and responded more cooperatively and willingly than any group of men I have seen. They likewise progressed faster from their low point of beginning. The single women were self-supporting, they had sufficient income to allow them to purchase target rifles and they did. The married women were the wives of shooters—strangely the bane of most shooting males is the fear that their wives will likewise want to shoot with them. We recognized this and they fire separately with the result that most of the women are deeply interested in it and finding the sport so interesting and economical a man and wife may readily purchase a gun; whereas, a man firing on his own would be forced to spend considerable discouraging months without one fearing he could not afford it because his wife would retaliate by purchasing a new coat.

The boys are promising material for coming years. Now they need the training that they may develop into capable and safe shots that they may more fully and safely enjoy their chosen sport of hunting and will be of greater value to their country.

The club medals produced much enthusiasm and brought forth progress from our poorer and most discouraged shooters—much needed confidence was gained by them from much serious practice stimulated by the thought that they could triumph over other men in their own class.

The price? Discouragement! Self-sacrifice! Dismay! Overcrowding of our range by the influx of enthusiastic new shooters not understanding our range procedure! But constant study and planning overcame this. A serious shortage of club equipment was overcome as each purchased his own equipment.

We uncompromisingly recommended purchase of the new Remington 513T Matchmaster. First owing to the fact that it was the only rifle of its class on which immediate delivery was available. By custom built, Winchester, Remington and miscellaneous rifle shooters of experience it was heralded as the best buy on the market per dollar invested.

At the present we are riding the crest of the wave of optimism; having reached it largely through the methods described herein. That ours and other clubs may continue in this direction thus upbuilding the National Rifle Association and aiding to safeguard America we must cooperate and commence our planning and launch our efforts now!!—Jim W. LeBar, Douglas Rifle and Pistol Club, Inc., Douglas, Wyoming.

## TOURNAMENT REVIEWS

**Quinnipiac Indoor Junior:** One hundred and seven individuals and 13 teams thronged New Haven on November 22 for the first annual Quinnipiac Junior Rifle Club Indoor Junior Championship. It was a man-sized tourney for the kids who came from all sections of Connecticut, New York and New Jersey. Starting off the four match program Wesley Chalker of Middletown, fired the only possible in the 20 shot prone event to take Class A honors. Philip MacDonald, Ridgefield, N. J., won the Class B section with 198. Harold Levine of New Haven, compiled a 97-86—183 in the prone-off-hand event to outrank Roy Splieth of Ridgefield for a Class A victory. William Brueler, Jr., of New Haven, was the Class B winner. The Indians, crack five man New Haven squad, toppled the invading Xavier High School R. O. T. C., of New York City in the prone and off-hand team event. Dick Allen, Louis Bernardini, Kenneth Ludington, William Brueler and Dave Sherrick totalled 871 to Xavier's 847. Waterbury and the Quinnipiac Girls trailed with 846 and 845, respectively. Winding up the program, New York City's Thomas Pfeifer grabbed the unlimited re-entry Junior Handicap match by outranking Levine with a possible. Stanley Levine, also New Haven, topped the Class B entries in this match.

**Mid-West Gallery Pistol:** Seventy-five competitors went to the firing line for the three day shoot of Chicago's Commonwealth Edison Club November 28, 29 and 30, and from scores turned in, it resulted in a near "blitz" on National 50 foot Gallery Records. Harrassed no end by invading pistol aces from Iowa, Ed Neuman, Chicago's ace, turned in a great exhibition, entering five of seven matches and winning two firsts, a second, third and fourth. He scored a 280 in the three-stage .22 caliber event but had to be content with second behind Andy Adamsen's 288 score. That gave the Cedar Falls shooter a tie for the national record with Walter Walsh. Neuman turned on the pressure with a sizzling 190 to win the center fire-slow fire by 15 points, and the gold award in the aggregate by 30 points over Ken Smith with 920 points. Ralph Wilds of Cedar Falls took first in the .22 slow fire match with 185 before Stanley Iverson ran out the .22 timed and rapid fire events with good scores of 197 and 192, respectively.

**Rockford Gallery Rifle:** The first registered gallery event ever held in the Rockford, Illinois, locality drew 27 competitors to the spacious industrial league range on December 14. Biggest prize winner of the day turned out to be Harry Grimesey of Janesville, Wisconsin, who took the top medal in the aggregate with a two-match total of 664 x 700 after winning the first match, prone and offhand, any sights, with 381 x 400. Dr. Sam Oren of Rockford, copped the prone, sitting, offhand event with 291. Second place in the aggregate went to George Austin while other medals went to High Expert Lew Mason, High Sharpshooter George Johnson and High Marksman Swen Uddin. In a special event which did not count in the aggregate, Dudley Steen of Maywood, Illinois, turned in a 40-shot total of 374 with iron sights, prone and standing.

# COMING EVENTS

The four classes of registered tournaments are indicated as follows: **AA**—National Matches; **A**—Regional; **B**—State Championships are large District Matches; **C**—Local. *Unregistered* matches are not coded. Classification of competitors for prize awards indicated by code and asterisk—**C***, etc.

## FEBRUARY

### RIFLE

**7–8 New York** (B*), Niagara Frontier 100 Yard, Buffalo. D. B. Hilliker, 257 Fayette Ave., Kenmore.
**8 New Jersey,** Metropolitan League Team, Union City. Austin A. Huffman, Valley Cottage, N. Y.
**15 Oregon** (C*), Oregon State Gallery, Portland. E. L. Plogg, 1911 Ankeny St.
**20–21 New York,** Metropolitan Rod & Gun Club, Brooklyn. Charles Brownell, Jr., 162 Pacific St.
**21 North Carolina** (C*), Charlotte Rifle, Charlotte. John Pierczynski, 1221 E. 36th St.
**21–22 Ohio** (B*), 17th Annual Ohio Gallery, Columbus. C. I. Greer, P. O. Box 123, Barberton.
**22 Illinois** (C*), Registered Gallery, Rockford. Dr. S. A. Oren, 907 Talcott Bldg.
**22 New Jersey,** Metropolitan League Championship, Union City. Austin A. Huffman, Valley Cottage, N. Y.
**22–23 Massachusetts,** 9th Annual Gallery, Beverly. David C. McNeill, 33 Beckford St.
**28 and March 1 Kansas** (C*), Central Kansas Gallery, McPherson. C. O. Cartwright.
**27–28 and March 1 Connecticut,** Connecticut State Ass'n Annual Gallery, New Haven. L. M. Ahlberg, Middlefield.

### PISTOL

**13 California** (C*), Tamalpais Gallery, Alto. Frances L. Wadman, Route 1, Box 854, Mill Valley.
**15 Kansas** (B*), Kansas State Gallery, Topeka. Howard Wagner, Syracuse.
**20 North Carolina** (C*), Charlotte Gallery, Charlotte. John Pierczynski, 1221 E. 36th St.

## MARCH

### RIFLE

**1 Minnesota** (C*), Southern Minnesota League, Owatonna. R. Gunderson, 1100 W. College St., Austin.
**7–8 Ohio,** Mariemont Rifle Club, Cincinnati. Dawson B. Sherick, 5635 Whitney Place.
**8 Oregon** (C*), Registered Gallery, Medford. Ivan K. Waddell, P. O. Box 1046.
**8 Washington** (C), Gallery Rifle, Spokane. Mrs. Mary E. Holt, 4118 N. Howard, Spokane.
**11–15 Florida,** National Mid-Winter, St. Petersburg. T. F. Bridgland, 2742 2nd Avenue, South.
**13–15 Illinois** (C*), Midwest Gallery, Chicago. Roy E. Gaut, 501 E. 88th Place.
**15 Illinois** (C*), Illowa Ass'n Gallery, Quincy. Dr. J. G. Johnston, 219 W. 7th St., Muscatine.
**15 Oregon** (C*), Registered Gallery, Portland. Paul R. Hespe, 1015 S. E. 12th Ave.
**21–22 Kansas** (C*), Western Kansas Gallery, Ellis. Dr. G. A. Surface.
**22 Ohio** (B*), 17th Annual Gallery, Columbus. C. I. Greer, P. O. Box 123, Barberton.
**27–29 Illinois** (B*), University of Chicago Indoor Dewar, Chicago. Russell Wiles, Jr., 5830 Stony Island Ave.

### PISTOL

**13 California** (C*), Tamalpais Gallery, Alto. Frances L. Wadman, Route 1, Box 854, Mill Valley.
**15 Wisconsin** (C), 9th Annual Tri-State Gallery, Superior. A. G. Vrooman, 1611½ Hammond Ave.
**17–21 Florida,** National Mid-Winter, Tampa. C. A. Brown, Hotel Thomas Jefferson.
**24–28 Florida** (C*), Miami International, Miami. Clem Theed, P. O. Box 363, Coconut Grove.
**28–29 Vermont** (B*), Vermont Gallery, Northfield. P. H. Teachout, Underhill Center.

## APRIL

### RIFLE

**4–5 Massachusetts,** 7th Annual Junior, Beverly. David C. McNeill, 33 Beckford St.
**11–12 Kansas** (B*), Kansas State Gallery, Manhattan. K. A. Hugos, 223 Humboldt.
**12–19 New Mexico,** Coronado Cup, L. D. Wilson, Santa Fe.
**18–19 Ohio** (C), 11th Annual Ohio Gallery, Columbus. C. I. Greer, P. O. Box 123, Barberton.
**19 Connecticut,** Sofley Memorial, New Haven. Joseph Morin, 221 White St., Hartford.
**25–26 Vermont** (B*), Vermont Gallery, Northfield. P. H. Teachout, Underhill Center.

### PISTOL

**10 California** (C*), Tamalpais Gallery, Alto. Frances L. Wadman, Route 1, Box 854, Mill Valley.
**19 Wisconsin** (C*), Registered Gallery, Madison. A. T. Mickle, 541 State Office Bldg.
**26 Wisconsin,** Gallery Tournament, Madison. H. B. Jacobs, 1204 Drake St.

## MAY

### RIFLE

**9–10 New Mexico,** .30 Caliber. Roswell. L. D. Wilson, Santa Fe.
**24 Indiana** (B*), Mid-West Rifle, Lafayette. C. B. Gildersleeve, Lafayette.
**30–31 Oregon** (B*), Medford Rifle, Medford. Ivan K. Waddell, P. O. Box 1046.

### PISTOL

**4 California** (B*), Annual West Coast, San Diego. R. S. Pease, Route 3, Box 84.
**8 California** (C*), Tamalpais Gallery, Alto. Frances L. Wadman, Route 1, Box 854, Mill Valley.
**17 Illinois** (C*) Sheridan Club, Deerfield. Robert J. Spahr, 33 N. LaSalle St., Chicago.

## JUNE

### RIFLE

7 **New York** (C*), Forbes Rifle Club, Rensselaer. Henry W. Ristau, 38 Walker St.
14 **Illinois** (C*), Sheridan Club, Deerfield. Robert J. Spahr, 33 N. LaSalle St., Chicago.

### PISTOL

7 **Michigan** (C*), Registered Spring, Jackson. R. V. Gray, P. O. Box 275.
11 **Illinois** (C*), Sheridan Club, Deerfield. Robert J. Spahr, 33 N. LaSalle St., Chicago.
12 **California** (C*), Tamalpais Gallery, Alto. Frances L. Wadman, Route 1, Box 854, Mill Valley.
21 **Maryland** (C*), Summer Pistol, Sparrows Point Marcus H. Miles, Chief of Police, Sparrows Point.

## JULY

### RIFLE

3–4 **South Carolina** (B*), State Small Bore, Greenville. L. W. Bolt, 1415 Laurens Rd., Greenville.
11–12 **Illinois** (B*), Blackhawk Rifle, Aurora. Cora Converse, Box 153, Oak Glen.
18–19 **Pennsylvania** (B*), Vandergrift-Carnegie Annual S. B., Vandergrift. R. M. Walbeck, 245 Sherman Ave., Vandergrift.
19 **Illinois** (B*), Sheridan Club, Deerfield. Robert J. Spahr, 33 N. LaSalle St., Chicago.
19 **New York** (C*), Annual Tournament, Rensselaer. Henry Ristau, 38 Walker St.

### PISTOL

10 **California** (C*), Tamalpais Gallery, Alto. Frances L. Wadman, Route 1, Box 854, Mill Valley, California.
12 **Illinois** (B*), Sheridan Club, Deerfield. Robert J. Spahr, 33 N. LaSalle St., Chicago.
19 **Tennessee** (B*), Tennessee State, Nashville. C. B. Mason, 1500 North 5th St.

## AUGUST

### RIFLE

2 **New Mexico** (B*), State Small Bore, Clovis. L. D. Wilson, Santa Fe.

### PISTOL

1–2–3 **California** (B*), S. W. International, San Diego. R. S. Pease, Route 3, Box 84.
14 **California** (C*), Tamalpais Gallery, Alto. Frances L. Wadman, Route 1, Box 854, Mill Valley.
16 **Illinois** (C*), Sheridan Club, Deerfield. Robert J. Spahr, 33 N. LaSalle St., Chicago.

## SEPTEMBER

### RIFLE

13 **Illinois** (C*), Sheridan Club, Deerfield. Robert J. Spahr, 33 N. LaSalle St., Chicago.

### PISTOL

6 **New Mexico** (C), Pistol Tournament, Santa Fe. L. D. Wilson, Santa Fe.
11 **California** (C*), Tamalpais Gallery, Alto. Frances L. Wadman, Route 1, Box 854, Mill Valley.
20 **Illinois** (C*), Sheridan Club, Deerfield. Robert J. Spahr, 33 N. LaSalle St., Chicago.

## OCTOBER

### RIFLE

11 **Illinois** (B*), Annual Harvest, Deerfield. Robert J. Spahr, 33 N. LaSalle St., Chicago.

### PISTOL

9 **California** (C*), Tamalpais Gallery, Alto. Frances L. Wadman, Route 1, Box 854, Mill Valley.

## NOVEMBER

### PISTOL

13 **California** (C*), Tamalpais Gallery, Alto. Frances L. Wadman, Route 1, Box 854, Mill Valley.

## STOLEN GUNS

Caliber .30 M1903, National Match No. 1266726. Stolen last October from Mr. L. H. Darling, Route 2, Box 125 A, Chico, California.

Unertl 14-X rifle scope, 1½ inch, with Lyman mounts. Serial 1774. Stolen between December 16 and January 6 from home of Omer T. Krebs, Lorain, Ohio. Ten Dollars reward will be paid for information resulting in the recovery of this scope. Notify Omer T. Krebs, 2539 Broadway, Lorain, Ohio, or Chief of Police of Lorain.

Smith and Wesson .38-44 Outdoorsman, Serial No. 48999, 6-inch barrel, magnum grips. Stolen with ammunition and money from home of Spencer P. Bowes, Franklin Street, Hillandale, Maryland. Anyone having information in this case please communicate with Mr. Bowes or Maryland State Police.

K.22 Smith and Wesson revolver. Serial No. 674159. Stolen with wool-lined holster on December 30, 1941, from home of Raymond W. Van Dinen, 4013 Wakefield Road, Berkley, Mich.

## CHALLENGES

The California (Pennsylvania) State Teachers College second team challenges any Junior College or high school, metallic sights, 50 feet, 10 shots each prone, kneeling and N. R. A. standing. High five of 10 to count. Contact Charles Hamilton, second team manager, Dixon Hall, State Teachers College, California, Pa.

Irvine Rod and Gun Club challenges any team in country to pistol matches. Entire club membership to fire, scoring 10 highest men. Fifty feet, any sights, 20 shots per man offhand or 10 shots each prone and offhand. Address S. E. Brown, Secretary, 417 East Street, Warren, Pa.

## THREE FLORIDA MATCHES BECKON IN MARCH

Both rifle and pistol shooters who like to journey down to the sunny South to officially open their big-time outdoor shooting year—with the idea in mind of getting in a little vacation as well—will get in their usual quota of hot Florida competition next month.

The Flamingo Pistol Matches have been cancelled, but will be replaced from March 24 to 28 by the Miami International Matches on the same range. But before enjoying the hospitality of the Palmetto Club boys at Miami, the busy handgunners will have taken in Tampa's traditional National Mid-Winters from March 17 to 21.

Riflemen will have their usual four days of top notch competition at the National Mid-Winter Small Bore Matches at St. Petersburg from March 11 to 15.

## N.R.A. GALLERY LEAGUES

**Twin City Rifle League (Minn.)**—*10 shots each, 4 positions, 50'.* Standings to December 12: University Club, 2–0; Northwestern, #1, 2–0; Minneapolis, 1–1; Northwestern #2, 1–1; St. Paul #1, 1–1; St. Thomas, 1–1; Northwestern #3, 1–1; Little Gophers, 0–2; United Sportsmen's, 1–1; St. Paul #2, 0–2. High Individual score: Dr. E. O. Swanson, 394. High team score: Northwestern #1, 1918.

**Southern Rifle League of Chicago**—*5 shots each, 4 positions, 50'.* Standings to December 13: U. of Chicago, 5–0; Lakeside Press, 4–0; Ceco, 4–1; Chicago Bridge, 1–3; Comm. Edison, 1–3; Roseland, 0–4; Nathan Hale, 0–4. High individual score: Totura, 194. High team score: U. of Chicago, 937.

**Northwest Rifle League (Illinois)**—*5 shots prone, sitting, 10 shots kneeling, standing, 50' and 75'.* Standings to December 8: Westric, 6–0; Lakeview, 5–1; Humboldt Park, 4–2; Winnetka, 3–3; DesPlaines, 3–3; Edison Park Legion, 1–5; Park Ridge, 0–6. High individual average: Edwin LaRue, 285.83.

**Niagara Frontier Rifle (N. Y.)**—*10 shots prone, standing, 5 shots sitting, kneeling, 50'.* Standings to December 18: Lockport, 5–1; Buffalo, 4–2; R. & H., 4–2; Twin City, 3–3; South Buffalo, 2–4; Lewiston, 0–6. High individual score: R. Lang, 292.

**C. R. E. W. Rifle League (Pa.)**—*10 shots each, 4 positions, 50'.* Standings to December 1: Sylvania, 2–0; Eaton, 1–0; Wellsville, 1–1; Cowanesque, 0–1; Wellsboro, 0–2. High individual score: Gerould, 386.

**Southwestern Ohio Rifle**—*10 shots each, 3 positions.* Standings to December 4: Miami, 1–0; National Dist., 0–1; Wilmo, 1–0; Mariemont, 0–1; Columbia, 1–0; Northside, 0–1. High individual score: E. Vandeveer, 287.

**Muncie Rifle (Ind.)**—*10 shots each, 4 positions.* Standings to December 27: Ball Bros., 4–0; Muncie Malleable, 4–0; Eaton Merchants, 4–1; Delco Remy, 3–1; Retz Sporting Goods, 2–3; K. of P. Lodge, 2–3; Kuhner Packing, 1–3; Johnson Hardware, 0–4; Standard Brands, 0–5; High Individual score: Ed Anderson, William Keller, 380. High team score: Eaton Merchants, 1838.

**Long Island Rifle (N. Y.)**—*5 shots each, 4 positions.* Standings to December 6: ("A" League) Woodhaven American Legion, 6–0; Metropolitan 5–0; Edison Men, 3–2; City Bank, 4–3; Richmond Hill, 3–3; Briar Rod, 2–3; Civilian, 2–5; Roslyn, 0–7.

("B" League) Chase Bank, 5–1; Cypress Hills, 5–1; Equitable, #1, 4–2; Edison Girls, 4–2; Poly Day, 3–3; Poly Evening, 3–3; N. Y. & Queens, 3–3; Metropolitan Life Men, 2–4; De Mott Carmen, 1–5; Arma, 0–6.

("C" League) Edison #3, 6–0; Antlers, 5–1; Equitable #2, 2–4; Metropolitan Life Girls, 2–4; Beacon, 3–3; Chase Bank Girls, 0–6.

**District Rifle League (Wash., D. C.)**—*10 shots each, 3 positions, 50'.* Standings to January 8: U. S. Aggies, 7–0; Arlington, 7–0; National Capital #1, 6–1; Maritime Commission, 4–3; National Capital #2, 4–3; G. P. O., 4–3; Greenbelt, 2–5; Federal Marksmen, 1–6; Christian Church, 0–7; Taylor Model Basin, 0–7.

# DOPE BAG ☆ ☆ ☆ Conducted by F. C. NESS

## THIS MONTH:

**Original Wire Wound Bullets · Gipson .278 Magnum · Gipson .270-4000 · Opinions on Bore Life · Heagle's Ballistic Tables · .277 Elliott Express · Hofe 7 mm. Super Express · 7 x 64-mm. Brenneke · .280 Halger · .288 McCrea · No. 4350 Warning · Trade Dope · Letters**

**Wire Wound Bullets.** Elmer Lisle noted a typographical error in our published address of the old National Projectile Works of Michigan. It should have been Grand *Rapids* instead of Grand "Island". He says his dad, M. C. Lisle, was the inventor of the wire-wound bullet, patented in 1899, and that he, Elmer cast all their bullets made in 1901 and 1902. The cotton-covered wire was wound tightly on the cast bullet, which was then swedged to size and lubricated.

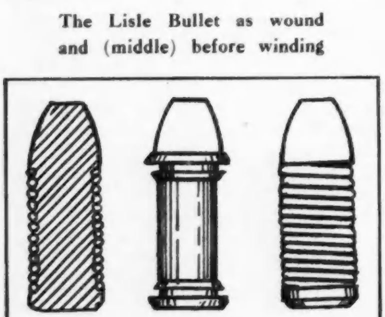
Hensley & Gibbs first wind their little coils of copper wire, then insert them in their bullet molds and cast the bullet inside the copper coil. I have learned they did not obtain the idea originally from Earl Gibbs, but from H. N. Hobart, of the U. S. Treasury Department, who is a shooter and a cartridge collector. He had wire-wound bullets in his collection, and asked Hensley & Gibbs to develop his idea of using a copper-tube driving-band, or elongated gas-check cup, on cast bullets as a substitute for jacketed bullets. One of our Canadian friends was using this stunt several years ago, by wiring his bullet sizer to provide a spot of heat for soldering or fusing his high-wall special base cups to his cast bullets. Our own sample of the N. P. W. wire-wound bullet has such a high copper base fixed to it.

* * *

**Bullet History.** A company to manufacture the original lubricated wire patched bullet was formed in 1897, while patent was pending and it was called "The National Projectile Works," of Grand Rapids, Michigan. The plant was located on Lyon Street in that city. Two patents covering the bullet were granted, 1899.

The president of the company, Mr. D. H. Armstrong, furnished most of the capital and was the leader of the business end of the organization. Mr. Lisle was the designer and engineer of all experimental work besides manufacturing.

The Lisle Bullet as wound and (middle) before winding



The sales of the wire patched bullets were quite large while I was employed there in the years 1903 and 1904, and great plans were being made for expansion in the near future but then reorganization of the company took place, misunderstandings and finally Mr. Lisle went to Canada to sell his Canadian patents and the company started on the downgrade due to lack of manufacturing skill. Eventually, around the year 1906, Mr. Armstrong pulled up stakes and moved the whole works to Ontario, California, later to Napa, California, where they were located as late as 1911, after which time I have no record.

The "Lisle Wire Patched Bullet," as it was originally known, was originally cast and wound with a very strong cotton or other fabric cord. This was found to be not strong enough so was changed to a soft iron or copper wire, cotton covered, which quickly proved its worth for all calibers of bullets tried.

The bullet was made in the following manner: First the moulten lead of proper consistency was poured into multiple moulds, giving us the grooved slug. Second, they were passed through a rolling machine to assure roundness to the bullet and to open up the grooves for the wire. Third, the bullets were fed into the patching machines, which were worked automatically, clinching the end of the wire in the groove with a little hammer, winding the wire on the body of the bullet, and another hammer to clinch the other end of the wire and a shear to clip off the wire and a kick-off to kick the finished bullet out. Fourth operation was to pass it through another rolling machine to roll the lead flanges completely over the wire ends and, lastly, the bullet was swaged to size and weight ready for loading and crimping into the shell. The bullets were then lubricated, loaded into the shells, packed into boxes and shipped to the dealers.

Much costly experimenting proved that the wire must be wound on the slug after casting to insure accuracy and dependability. Thousands of bullets were made up by winding the wire in coils and placing in moulds before pouring in the lead, but they did not bring results, besides the cotton covering could not be used, which defeated the main purpose of the wire patch.

The .22 cal. wire wound bullets were a revelation because they cleaned the bore after every shot and firing could be maintained indefinitely, but the bullets were too expensive to produce and were discontinued. The wire-patched bullets were made in all calibers popular at that time and were in great demand by shooters. I am a strong believer in the efficiency of the wire patched bullet and am sure if they were manufactured again they would quickly be adopted by most shooters due to their great reduction in recoil, flatter trajectory, longer life of barrel and better killing properties.—Elmer Lisle.

* * *

**Gipson .278 Magnum.** Vernor Gipson has given us some further dope to supplement that which we gave in the January Dope Bag, on this cartridge (.300 H. & H. belted case) and on his .270-4000 (.30 Newton case) both of which use .270 Winchester bullets. Gipson again visited the Pennsylvania woods during the past deer season and saw a nice buck killed with his .278 Magnum at 700 yards. The load was 57 grains of No. 4064 behind the Winchester 130-grain bullet and both shots fired were hits. Either would have been fatal. As it was, the buck moved only ten yards after the first shot which alone would have killed him in spite of the extreme range. This load, primed with the R.A. No. 9½, develops 3110 f.-s. in a 26-inch barrel, a duplication of the standard .270 Winchester. It is a mild one, however, heavier loads of No. 4064 giving greater muzzle velocities with the 130-grain W.T.&C.W. bullet, in the same barrel, as follows:

| | |
|---|---|
| 59 grains | 3174 f.-s. |
| 61 " | 3283 " |
| 63 " | 3379 " |
| 65 " | 3458 " |

Another chronographed load was 56 grains behind the 145-grain W.T.&.C.W. bullet with an m.v. of 3467 f.-s. The favorite load used by one of Gipson's customers was the 57-grain charge behind the 160 grain Barnes bullet.

* * *

**Gipson .270-4000**, with a 27-inch barrel was also chronographed while Vernor was at Niedners. The R.A. No. 9½ primer was used in all loads, and .270 Winchester caliber bullets. The data follows:

*100-grain W.T.&C.W.*

| | | |
|---|---|---|
| 63 grains | 3031 | 3887 f.-s. |
| 64 " | " | 3944 " |
| 65 " | " | 4025 " |

*130-grain W.T.&C.W.*

| | | |
|---|---|---|
| 60 grains | 4064 | 3377 f.-s. |
| 62 " | " | 3454 " |
| 66 " | " | 3419 " |
| 69 " | " | 3549 " |
| 71 " | " | 3609 " |

*145-grain W.T.&C.W.*

| | | |
|---|---|---|
| 61 grains | 4350 | 3075 f.-s. |
| 64 " | " | 3133 " |
| 68 " | " | 3342 " |

*150-grain Barnes*

| | | |
|---|---|---|
| 65 grains | 4350 | 3177 f.-s. |
| 67 " | " | 3260 " |

*160-grain Barnes*

| | | |
|---|---|---|
| 61 grains | 4350 | 3067 f.-s. |
| 62 " | " | 3044 " |
| 67 " | " | 3242 " |

In the last group the higher velocity of the 61-grain charge is accounted for by slightly decreased air space due to the lubricating base wad used behind the bullet in that load only. Also chronographed was 58 grains of No. 4320 behind the 130-grain W.T.&.C.W. bullet which gave 3180 f.-s. in the same barrel. The 100-grain Winchester bullet was also fired in the same test with 65 grains of No. 4064 and gave 3885 f.-s. which is about 350 f.-s. above the m.v. of the .270 Winchester cartridge.

With this case one owner reported a 6-inch group at 700 yards and a drop in impact of only 95 inches below the 200-yard zero. That is about four feet less than the .30-'06. Relative impacts at 300 and 400 yards were given as 5 and 20 inches, respectively. Others report good hunting accuracy at 1000 yards or V-ring accuracy on the 1000-yard target. Required elevations for 1000 yards from 200 yards were reported as 25 minutes for the 100-grain bullet, 20 minutes for the 130-grain Western O.P. and 18 minutes for the 137-grain reformed Youngberg bullet.

The 100-grain Winchester bullet apparently gave excellent accuracy in a 12-inch twist of rifling with a charge of 62 grains of No. 4064. The equivalent loads used for the elevations given above were: 65 grains of No. 4064 (or 63 grains plus a .064-inch Ipco lubricating base-wad) behind the 100-grain bullet, and 64 to 65 grains of No. 4350 behind the 130-grain and 137-grain bullets with base wads. The elevations, with all these loads, required for 600 yards, when zeroed at 200 yards, were 7, 7½ and 8 minutes of angle. The 137-grain Youngberg bullet is the one we used in the .270 Winchester as reported last month.

P. O. Ackley, who also necks down the .30 Newton case, thinks the Magnum barrel-life is longer than we implied in the January Dope Bag. Referring to all these big-case super-velocity cartridges we stated, "a couple of hundred rounds, or about that" and meant anything from 200 to 500 rounds. We still are of the opinion that their fine gilt-edge initial accuracy will have become dissipated somewhere within that bracket, some sooner than others. If they are used only during the hunting season for shooting game plus a few shots for checking the zero, they will last long enough. That, however, will still make them comparatively expensive playthings shot-for-shot. Ackley agrees to that.

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**"Hunting Trajectories"**, by William E. Heagle, in the December issue, pages 18, 19 and 20, was illustrated with diagrams showing 7-inch to 20-inch trajectory curves. The different standard loads, arranged in groups to fit each of these different trajectories, are now given here in ballistic tables supplied by Mr. Heagle.

| *Cartridge* | *Bullet Weight* | *Muzzle Velocity* | *Muzzle Energy* | *100-Yd. Drop* | *200-Yd. Drop* |
|---|---|---|---|---|---|
| **(7-Inch Trajectory Curve)** | | | | | |
| .220 Swift | 46 | 4140 | 1750 | 1.2 | 6. |
| .220 Swift | 48 | 4140 | 1825 | 1.2 | 6. |
| .270 Win. | 100 | 3540 | 2785 | 1.6 | 6. |
| .270 Win. | 130 | 3140 | 2850 | 2. | 8. |
| .30–'06 | 110 | 3380 | 2790 | 1.6 | 8. |
| **(10-Inch Trajectory Curve)** | | | | | |
| .219 Zipper | 46 | 3390 | 1175 | 1.6 | 10. |
| .219 Zipper | 56 | 3050 | 1155 | 2.4 | 10. |
| .257 Rem. | 87 | 3220 | 2005 | 2. | 10. |
| .257 Rem. | 100 | 2900 | 1870 | 2.4 | 10. |
| .35–3000 Sav. | 87 | 3040 | 1785 | 2.4 | 10. |
| .30–'06 | 150 | 2960 | 2920 | 2. | 10. |
| .30 Newton | 180 | 2830 | 3200 | 2.4 | 10. |
| .300 H&H Mag. | 180 | 3060 | 3745 | 2. | 10. |
| .300 H&H Mag. | 220 | 2730 | 3640 | 2.4 | 10. |
| 7.62–mm. Russ. | 150 | 2810 | 2635 | 2.4 | 10. |
| **(12-Inch Trajectory Curve)** | | | | | |
| .22 Sav. H. P. | 70 | 2810 | 1230 | 2.8 | 12. |
| .250–3000 Sav. | 100 | 2810 | 1755 | 2.4 | 12. |
| .256 Newton | 129 | 2770 | 2200 | 2.4 | 12. |
| .257 Rem. | 117 | 2630 | 1800 | 2.8 | 12. |
| .270 Win. | 150 | 2770 | 2560 | 2.4 | 12. |
| .30–'06 | 172 | 2700 | 2785 | 2.4 | 12. |
| .30–'06 | 180 | 2710 | 2940 | 2.8 | 12. |
| .300 Sav. | 150 | 2660 | 2360 | 2.8 | 12. |
| 8–mm. Lebel | 170 | 2610 | 2575 | 2.8 | 12. |
| .348 Win. | 150 | 2880 | 2765 | 2.4 | 12. |
| **(14-Inch Trajectory Curve)** | | | | | |
| .218 Bee | 46 | 2860 | 835 | 3.2 | 14. |
| .22 Hornet | 45 | 2600 | 675 | 3.2 | 14. |
| .25 Rem. | 87 | 2710 | 1420 | 2.8 | 14. |
| .25–35 | 87 | 2650 | 1355 | 2.8 | 14. |
| 7–mm. | 175 | 2460 | 2350 | 3.2 | 14. |
| .30–30 | 110 | 2720 | 1810 | 2.8 | 14. |
| .30 Rem. | 110 | 2720 | 1820 | 2.8 | 14. |
| .30–40 Krag | 180 | 2480 | 2460 | 3.2 | 14. |
| .30–'06 | 220 | 2410 | 2840 | 3.2 | 14. |
| .303 British | 174 | 2470 | 2360 | 3.2 | 14. |
| 8–mm. Spec. | 170 | 2530 | 2415 | 3.2 | 14. |
| .32 Win. Spec. | 110 | 2630 | 1690 | 2.8 | 14. |
| **(16-Inch Trajectory Curve)** | | | | | |
| .22 Hornet | 45 | 2650 | 700 | 3.2 | 16. |
| 6.5–mm. | 150 | 2260 | 1700 | 3.6 | 16. |
| 6.5–mm. | 129 | 2370 | 1610 | 3.6 | 16. |
| .30–30 | 150 | 2380 | 1415 | 3.6 | 16. |
| .300 Sav. | 180 | 2380 | 2265 | 3.2 | 16. |
| .32 Rem. | 110 | 2630 | 1690 | 3.2 | 16. |
| .348 Win. | 200 | 2520 | 2820 | 3.2 | 16. |
| **(18-Inch Trajectory Curve)** | | | | | |
| 6.5–mm. | 160 | 2160 | 1660 | 4. | 18. |
| .25 Rem. | 117 | 2300 | 1375 | 3.6 | 18. |
| .25–35 Win. | 117 | 2280 | 1350 | 4. | 18. |
| .30–30 | 165 | 2200 | 1770 | 4 | 18. |
| .30–30 | 170 | 2200 | 1830 | 4. | 18. |
| .30 Rem. | 165 | 2200 | 1770 | 4 | 18. |
| .30 Rem. | 170 | 2200 | 1830 | 4. | 18. |
| .30–40 Krag | 220 | 2190 | 2345 | 4. | 18. |
| .303 British | 215 | 2160 | 2230 | 4. | 18. |
| .32 Win. Spec. | 165 | 2260 | 1870 | 4. | 18. |
| .32 Win. Spec. | 170 | 2260 | 1930 | 4. | 18. |
| .32 Rem. | 165 | 2200 | 1775 | 4. | 18. |
| .405 Win. | 300 | 2220 | 3285 | 4. | 18. |
| **(20-Inch Trajectory Curve)** | | | | | |
| 8–mm. Mauser | 236 | 2100 | 2310 | 4. | 20. |
| .32 Rem. | 170 | 2200 | 1830 | 4. | 20. |
| .33 Win. | 200 | 2180 | 2110 | 4.4 | 20. |
| .35 Win. | 250 | 2160 | 2590 | 4.4 | 20. |
| .35 Rem. | 150 | 2360 | 1860 | 4. | 20. |
| .35 Rem. | 200 | 2180 | 2110 | 4. | 20. |

NOTE:—.303 Sav. 190 and 195-grain bullets at 1960 f.-s. will be about 1-inch lower than this curve at 100 yards and 4 inches lower at 200 yards.

---

Ray Conine, out in Montana, uses an Ackley Magnum (.270-caliber) and got a bull elk with it last fall, using only one shot at 600 yards. The load was 62 grains of No. 3031 behind the 130-grain Silver Tip bullet. It made a 2½-inch exit hole at that range. Ackley says his .250 Magnum has now had 400 rounds of super-duper stuff (3700 f.-s. and HiVel No. 2 powder) put through its bore, and as yet the throat has not worn or eroded sufficiently to permit seating bullets out of the case any farther than was possible originally. Powder loads in this smaller Magnum case run from 54 to 60 grains, whereas in the big-case Magnums they run from 56 to 67 grains.

Vernor Gipson also commented on the relatively short bore life when these great loads of powder are fired in the big cases. He tells his customers to expect a shorter bore life than is normal for the .270 Winchester or .30-'06. He believes, however, that if these Magnums are not fired too frequently on the target range, that the accuracy life will prove to be adequate and quite satisfactory for all sporting purposes, and equal that of the .220 Swift. On his last-season trip to Pennsylvania he carefully examined one of his .270-4000 jobs and found no visible evidence of erosion, although the owner claimed he had fired 500 rounds, but always with base wads. Vernor stated, "It still has crow accuracy at 400 yards".

Fred N. Barnes, the bullet maker of Bayfield, used a Gipson .250 Magnum for testing, which employment wears out barrels far faster than game shooting. After 1200 rounds, fired without wads, the throat erosion had extended only about ¼ inch and the groups had opened to a scant 2 inches at 100 yards. However, as stated previously, the .250 Magnum uses less powder than the bigger Magnums and probably has a longer bore life.

* * *

**.277 Elliott Express,** made by O. H. Elliott of Saginaw, Michigan, deserves mention here. Designed for strong falling-block single-shot actions or double rifles, this special 7-mm. has a rimmed case. Elliott uses the strong .405 Winchester case necked down for .284-inch bullets. The bore is .277-inch and the groove diameter, .284-inch. The twist of rifling is a turn in 10 inches, and the num-

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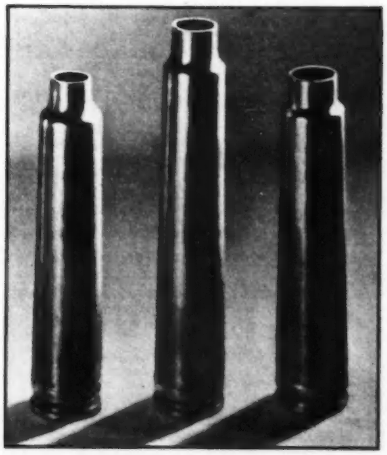
**McCrea Belted Magnums**
**.257 Super, .288 and .308**



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ber of grooves is eight. With 38 to 44 grains of No. 4064 this cartridge develops in round numbers, from 2400 to 2700 f.-s. m.v. with the 175-grain bullet, in a 28-inch barrel. Fully 3100 f.-s. m.v. with the 139-grain has been reached at pressures judged to be 50,000 pounds.

* * *

**Improved .276 Dubiel.** In 1939 Griffin and Howe improved the .276 Dubiel Magnum by throating deeper to permit seating the bullets farther out of the case to increase the cartridge overall length and which required longer actions, such as the Magnum Mauser. This increased the air space or powder capacity and permitted the employment of heavier powder charges, and it resulted in higher muzzle velocities. Although the same .275 H. & H. belted case is used, the improvement in ballistics and effectiveness with the same bullets makes a new cartridge of the .276 Dubiel Magnum.

Richard Carlson, of Hamilton, Montana, has had one of these improved G. & H. Magnums since early 1940 and has developed some fine loads, using the W.R.A. No. 120 primer, as follows: Western 139-grain O.P. and 60 grains No. 4350 (3190 f.-s.) or 55 grains No. 4064 (3246 f.-s.); Barnes or W.T. & C.W. 160-grain and 59 grains No. 4350 (3050 f.-s.) or 51 grains No. 4064 (2850 f.-s.); same makes of 180-grain bullets and 57 grains No. 4350 (2850 f.-s.). This last load is maximum. With the 160-grain bullet, 52 grains of No. 4064 (3200 f.-s.) is maximum. The W.C.Co. 175-grain S.P.B.T. bullet and 57 grains No. 4350 develops 2900 f.-s., but Carlson found this too much for this bullet, as it flew to pieces on deer at 400 yards. His pet match load is this 175-grain bullet and 35 grains No. 4064 which gives fine accuracy in his improved .276 Dubiel Magnum rifle. The ultimate big-game load is the Barnes 195-grain and 55 grains No. 4350 (2725 f.-s.). This long bullet has an S.D. of .344 according to Carlson, who wrote me:

"The .276 Magnum (Improved) is without doubt the finest long-range rifle we have today. It will buck wind better than the .270 Winchester or .300 Magnum, and it has less recoil than the latter. Its trajectory is flatter over long ranges than either of the other two. Its only rival is the .285 O.K.H. Duplex, and I claim the new .276 Dubiel is superior because of the greater strength of the belted Magnum case over that of the .285 O.K.H. which uses the lighter .30-'06 case".

* * *

**Other 7-mm. Magnums.** Before Hitler went on his current rampage, there was available an interesting German sporting rifle and cartridge known last as the Hofe 7-mm. Super Express. It had a big belted case 73-mm. long and a 170-grain B.T. bullet 36-mm. long. A 75-grain load of nitro-cellulose leaf powder developed 3360 f.-s. and a pressure of 57,000 pounds. The remaining velocity was 3160 f.-s. at 100 meters and 2970 f.-s. at 300 meters. Over the longer range the time of flight was .3166 second with a mid-range trajectory height of 3⅞ inches, which means less than 15 inches gravity drop over 300 yards.

Another good one was the, as yet unfinished, Brenneke 7-mm. with a case only 64-mm. long and, as finally standardized, a 146-grain bullet at 3100 f.-s. as driven by 58 grains of R. No. 1 powder. This was the 9.3 x 64-mm. necked down. While the case was only .04-inch longer than the .30-'06, it held more powder than the .300 H. & H. Magnum. This Brenneke 7-mm. was reported very accurate and fine for long-range game shooting. It featured the famous Brenneke H-Jacket "Torpedo" bullets which probably inspired our current Silver Tip and Core Lokt game bullets. In its early experimental form, it developed 3450 f.-s. m.v. with a 145-grain bullet, duplicating that of the once touted .280 Halger, another almost forgotten German cartridge. The .280 Halger was announced as giving 3500 f.-s. m.v. with a 145-grain bullet, but the pressure was 57,000 pounds.

* * *

**McCrea .288 Magnum.** Before he joined the Service, Lyman A. McCrea had a series of custom Magnum cartridges on the belted .300 Magnum case. These had an unusually abrupt shoulder. It is possible that they are still available from the successors to the McCrea shop. Three of these cases are shown in the cut on page 47. Left to right they are: the .257 Super Magnum, .288 Magnum and .308 Magnum. See the cut on page 47 and write Jack Ashhurst, successor to McCrea, same location.

* * *

**.30-'06 Load Too Stiff.** J. F. Mutter says that new cases will barely accommodate 57 grains of No. 4350 powder behind the M1 Service bullet (173-grain B.T.) and that fired cases from his M-70 and M-1917 rifles will just contain 57 grains, leaving no air space after the bullet is seated. While it is not uncommon practice to use 58 grains or more of this powder and compress the charge in seating the bullet, Mutter got primer leakage in both rifles, but without extraction trouble. He used No. 120 primers. With 57.5 grains about 50% developed primer leakage and 75% with the 58-grain load. He lives in Juneau and shoots in Alaska.

## TRADE DOPE

**E. T. P. R. Company.** The initials stands for Essex Target Practice Rod, and the company's address is 265 River Street, Orange, N. J. If you send them five fired cases from your center-fire revolver and give them the dope on make, model and barrel length they can supply a brass practice rod, five dummy cartridges, one hundred small muzzle-distance targets and one target holder which constitutes a complete outfit for home pistol practice. There is a 10% discount to N. R. A. members. This timely outfit requires no lead, tin, antimony, powder or primers and will permit pistol practice anywhere and at little cost.

**Niedner Rifle Corporation** informs us its facilities are devoted practically 100% to emergency work. Do not send guns there or to any other gunsmith or service organization without previous arrangement. At any time, anywhere, regarding any prospective service or job, it is wise to write first for quotations and shipping instructions. This is even more important now, in wartime.

* * *

**Bullseye Pistol Mfg. Co.**, of Rawlins, Wyoming, quotes new prices effective this year from January 1, 1942. The Sharpshooter pistol including No. 6 chilled shot, loader, and extra rubber bands ranges from $1.75 upwards, according to finish. This light, toy-like pistol is very accurate at short range and it is quite practical for pistol practice in any one's office, home, apartment or room.

* * *

**R. B. Sisk**, the .22-caliber-bullet maker of Iowa Park, Texas, asks his customers to exercise extreme patience. Because of the present difficulty of obtaining raw materials coupled with an unprecedented demand for his bullets, Sisk is far behind on his orders. As a direct result of his customers' impatience he is also behind on his correspondence. He assures us every request will be met in its regular turn and as soon as is humanly possible. Patience will help to hasten the day of delivery or of reply.

* * *

**L. E. Wilson**, who is building a reputation with his cartridge gauges, head plugs and Universal Shell Trimmer, now has an improved burring tool for smoothing the lips of cases inside and out. It is a double-ended hand tool covering any and all calibers with its inside and outside cutting cones. We tried it and found it cut fast without chipping. It is a part of the Wilson trimmer outfit, but it can be bought separately for a buck and two bits. Every reloader should have one.

* * *

**Outdoor Graphic**, a weekly outdoor newspaper, at a dime per copy, will cater to the 15,000,000 American sportsmen who take out hunting and fishing licenses annually and spend more than five billions on their sport. It includes a question-and-answer service on where to go for what and when. Making its "first regular appearance" this month, it will "first" be distributed at five sportsmen's shows beginning with the Boston show on February 7. It is published in the Daily News Bldg., New York City.

## LETTERS

**.22 Newton.** Perhaps I can add a little to the current discussion of Charles Newton and his cartridges, particularly regarding the .22 caliber. I agree with Mr. Tedmon in this, as it certainly was made and sold commercially, and in some quantity. Mr. Tedmon refers to 3 or 4 he has handled, and 2 more used by Ford. I can account for 7, probably none of which are duplicates of the ones he is familiar with, as they came from the East. In addition to these 7, I once saw another in a Detroit pawn-shop, which might have been a Ford gun. It was in terrible shape, and I did not buy it because it was almost hopelessly wrecked by abuse on the outside.

Of the 7, I have owned 2, and still have the action of one of these, also a short section from the original barrel. The other I used as was for quite a while. I had cartridges for it that were stamped "N A C", as were all the other cartridges in the line, and some that had no head-stamp at all. When these were gone. I made my own from 7 m-m and .257 Roberts cases. The other .22 Newton was made over into the .240 Super Varminter that you saw at Perry in 1940, and which is now owned by a local shooter.

The remaining 5 guns have been owned by others, but I have a record of the serial numbers of two of them, which I have rebarreled since the Federal Firearms Act required the keeping of these. 3 of them were fitted with new barrels of my own make. The others were sent to me by owners in widely-separated parts of the East, and in both cases a brand-new .22 Newton barrel was sent along to be fitted! One of these was a segmental rifled barrel (the spare), the other was the usual square-cornered type of rifling used in other rifles, and probably was made for Newton on contract, as the gun it was to be fitted to was one of the so-called "Buffalo" models, the last to be made by Newton. That entire model production may have been a contract job. The basic design was excellent and the barrels were all well made, but workmanship on the action was simply lousy, and as a rule the material was rather poor. As a result, the parts which were designed to serve in more than one capacity, of which there were several, usually failed to function after a time. The Meeker-Newton later built in New Haven, Conn., was the same as this Buffalo model.—J. E. GEBBY.

* * *

**From the Designer.** Much interested in the explanation of what spins the rifled slug as explained in "Letters" in the RIFLEMAN. I note the theory is the generally accepted one that head-on pressure against the vanes causes rotation—and presumably stabilizes the slug in flight. I have always had a quite different theory, which may not be correct, but which you may find interesting.

Of course the rifling on fired slugs is practically obliterated by contact with barrel—before the slug leaves the gun. If you will

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examine fired slugs recovered at long range in soft dirt or recovered from waste you will note this is evident. I personally think this is caused more by gas pressure against the base of slug and the resulting expansion than by contact with the barrel. Anyway there is practically no rifling left on the slug when it leaves the gun—certainly not enough to allow of a rotating effect from air pressure. I think the accuracy of the individual slug is determined in the barrel, after firing, rather than after it leaves the gun.

There is much question about the rotation of the slug. Tests made by shooting against fine brass wire strands some distance apart will as likely show the embedded pieces parallel as often as crossed. So much for rotation in flight. I personally think there is rotation in the barrel—certainly during expansion of the slug—but think it mainly effective in stabilizing the slug during passage through the barrel. The choke certainly upsets this stabilization to some degree as cylinder barrels consistently perform better than those that are choked.

Slugs made with straight vanes parallel to the slug's axis will keyhole often while the same vanes in a spiral never seem to give keyholes—so there apparently is some rotation involved. Then, too, if slugs are made of very hard alloy and the bases filled with paraffin there is very little expansion and the rifling remains intact. On the head-on contact theory these should be accurate while as a matter of fact they are very inaccurate and keyhole badly.

An interesting feature of the rifled slug is the fact that it is an entirely different slug after firing. It changes diameter and length and becomes ballistically much more efficient. This accounts for the amazement expressed sometimes when an unfired slug is examined alongside some nice 3-inch 50-yard groups. It was a very much altered slug that did the real work—not the thoroughly unbalanced projectile that appears in the unfired shell.—KARL M. FOSTER.

* * *

**1903 and 1906.** I have a Model-1903, Caliber .30 Rifle, commonly known as the "Springfield". The number on the receiver is 277527. On the barrel at the muzzle is S. A. 2-07. This rifle is in very good condition.

During this season it was used for deer with the 1906 180-grain Bronze Point Remington Hi-Speed shells. Should the 1906 Hi-Speed shells be used, or would the old-style '03's be all right? I notice that when the cartridge is taken out of the chamber, a few marks appear on the bullet, and it also seems to work pretty tight. After reading the article on page 202 of Stoeger's Handbook about the Springfield, I wonder if I should use only 1903 shells.

I know there is a difference in velocity and energy in the 1903 and 1906 cartridges. Is there a difference in the case? Will the gun burst if the 1906 cartridges are used? I will have this gun remodeled if I can use the 1906 shells.—E. E. W.

***Answer:*** The Model-1903 Springfields were made for the Model-1903 cartridge only in the first year of its manufacture. Since 1906 all Springfield rifles have been made for the .30-'06 cartridge, which very promptly supplanted the Model-1903 cartridge. The Model-1903 cartridge had a 220-grain blunt-nose bullet (like that of the Krag) and a case neck ⅛ inch longer. In all other respects it is identical with the Model-1906 cartridge. Your rifle is undoubtedly chambered for the Model-1906 cartridge, and you could not seat a Model-1903 cartridge in it, without considerable forcing of its longer case.

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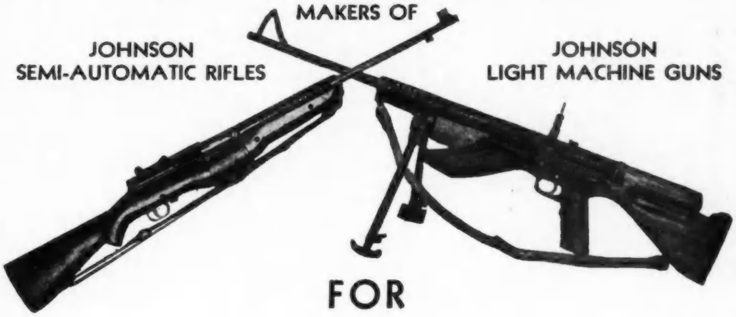

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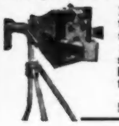

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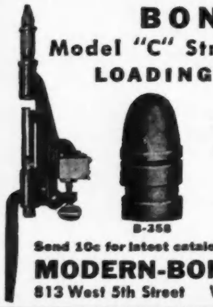

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**ITHACA Field 10x32 Nitro, excellent, $45.00. Winchester Lever 10x32 full, very good, $17.50. Savage 720 12x28 Polychoke, excellent, $60.00. Winchester 64 32 Special, very good, $45.00. Winchester 95 Lever 405 W.C.F., good, $28.50. Remington Model 8 Automatic 32 Remington, very good, $50.00. Colt Automatic 45 Caliber Commercial, new, $35.00. S. & W. K-22 Masterpiece 22 L.R., excellent, $40.00. Many others. List stamp. Ed Howe, Coopers Mills, Maine. 2-42**

EXCELLENT custom 24" Enfield Sporter, oiled Olympic stock, Jostam, Redfield hooded ramp, 70-RWT. $55.00 or perfect .38 Shooting Master, holster. Perfect K-22 for perfect .22 OMT, or $35.00. RIFLEMAN, unmarred, 1937-1941, N.R.A. detachable binders, $18.00 or v.g. 4½" Woodsman. Rufus Choate, Teaneck, N. J. 2-42

PACIFIC Reloading Tool, 38 Spec.; Ideal Powder Measure; Ideal Bullet Resizer and Lubricator, $25.00. WANT—22 Woodsman or revolver. W. A. Ross, 1912 Union Street, Port Huron, Michigan. 2-42

**ATLAS PRECISION LATHES, Millers, Shapers, Drill Presses, Etc. Shooting equipment acceptable part payment. Balance terms. Request catalogue. Claude Roderick, Authorized Atlas Dealer, Monett, Missouri. 2-42**

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**$900.00 OWENS dble. 20x28", both modified. Handsome engraving. Ejectors, single trigger, trunk case, fine, $350.00. $200.00 Sedgley Hi-Wall, Kilburn Hornet, excellent, $98.50. Beautiful Scheutzen Hi-Wall, set triggers, 22 cal. heavy Zischang barrel, Target sights, palm rest, excellent, $79.50. Beautiful Ballard, set triggers, 25 R.F., perfect, $49.50. Winchester 70 Kilburn Hornet, 48 Lyman, excellent, $75.00. Winchester 54, 270, Hensoldt Ziel-Dialyt 2¾X scope, G. & H. Q. D. mounts, 70 stock, Q.D. sling, fine, $95.00. Winchester 71 Deluxe 348, excellent, $55.00. Remington M8, cal. 35 Automatic, fine, $49.50. Late Belguim Browning Automatic 12 gauge Cutts Compensator, excellent, $75.00. Late Browning O. & U. 12x30 ventilated, stock altered, excellent, $89.50. Winchester M12 Skeet, Cutts Compensator, new, $72.50. Winchester M12 Trap 12x30 Ventilated, new, $98.50. Remington Automatic "Sportsman" 20x28" modified, excellent, $52.50. S. & W. 357 Magnum 7½", mould, loading tools, excellent, $75.00. High Grade Imported Hammer dble. rifle, engraved, about 577 cal., fine, $29.50. Voigtlander, "Scoparette" 2½X, perfect, $47.50. WANTED—Cash or Trade, 22, 38 Sp., 45 Cal. Revolvers, Automatics. Andrew Spina, Towanda, Pa. 2-42**

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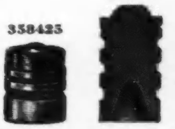

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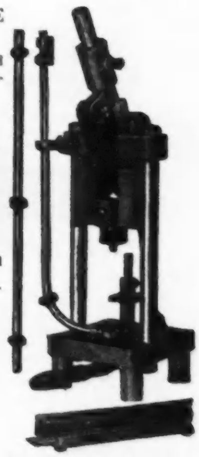

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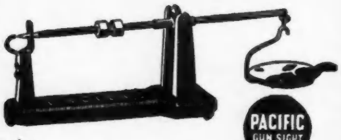

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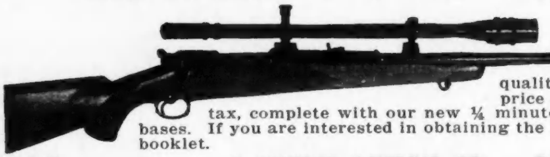

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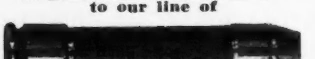

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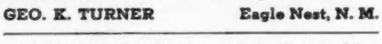

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WANTED:—1933 Savage, with scope; preferably 422 Lyman. Cash. G. N. Schicker, 126 Fulton St., Jamestown, N. Y.

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**WANTED—Used Colt 22 Pistols. Highest prices paid. Send full particulars. Percy Hoffman, 36 S. 4th Street, Harrisburg, Pa. 2-42**

WANTED—Officer's Model .22 Target, K-22 Outdoorsman or Colt Ace .22 Auto. State condition. John Michalek, 2225 Waverly, Waukegan, Illinois. 2-42

WANTED for cash—7mm rifle barrel to fit Mauser 98 action, very good. 7mm cartridges. Pacific Reloading Tool. Dies and Moulds 7mm, 9mm, 30-40, 38-40, 45, 38. State price and condition first letter. DelRoy Acker, Berwyn, Pa. 2-42

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WANTED—Spotting Scope, Mauser mounts and scope, Pacific revolver dies for .32-20, .38 Special; also Moulds, Primers, and powder. R. G. Hull, Albion, Pa. 2-42

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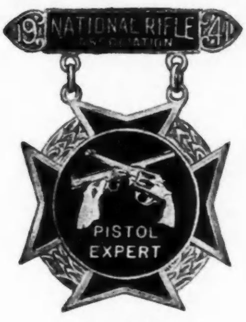

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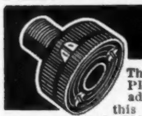

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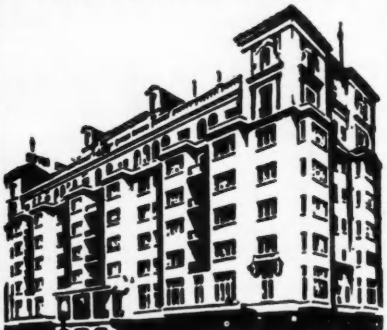

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**WANTED—Cash paid for antique firearms, Lugers, Mausers, 45 Colt S. A., World War rifles, bladed weapons, Cased Colts, Derringers. Robert Abels, 860 Lexington Avenue, New York. 2-42**

WANTED—Remington Model 14 any caliber, 25 or 35 Remington Auto; also 30 or 35 Newton. Barrel condition of above rifles unimportant. Must be cheap. Warren Dassy, Gladwin, Michigan. 2-42

WANTED—Circassian or French Walnut Mauser Stock, finished, price low; also Mauser barrel. John A. H. Siers, 71 Bleecker St., Jersey City, N. J. 2-42

WANTED—7 M.M. Mannlicher Carbine in excellent condition. Preferred without scope mounts. C. A. Van Flandern, 571 Morewood Parkway, Rocky River, Ohio. 2-42

WANTED—2½X Lyman Alaskan Rifle Scope without mounts. Frank Chavrack, Route No. 1, Box 39, Anaconda, Montana. 2-42

WANTED—Several 38 Specials. Colt Official Police or S & W Military and Police. Must be 6" barrel, blue finish and very good condition or better. Describe fully, state best cash price. K. R. Lewis, 103 N. Ford Street, McMinnville, Oregon. 2-42

WANT—Good Lyman Alaskan Scope, state type reticule, year, cash price. Lloyd Gorsuch, Hartville, Wyo. 2-24

**WILSON WANTS .38 Cal. Colt or S & W Specials for cash. Will pay very high prices for good guns. Barrel and action must be good, bluing not important. State price wanted in first letter. Wilson's, 3082 W. 25th St., Cleveland, Ohio. 2-42**

WANTED—Single Shot Springfield .45-70 and 405 gr. mould. Hickory Cleaning rod .45 Caliber, forty-five inches long. FOR SALE: New S & W K-32 with 3 boxes ammunition, $40.00. Carl H. Weidenmier, Berlin Center, Ohio. 2-42

WANTED—.22-.45 Service Model Conversion Unit together with National Match 45 automatic. Square Deal, Cash. A. W. Bruce, Gold Beach, Oregon. 2-42

WANTED—WILL PAY CASH for DCM Sporter, Unaltered, Excellent or better. Or for like M-70, 30-06. C.O.D. Examination privilege required. M. G. Stewart, Box 1108, Shreveport, La. 2-42

WANTED—Mauser Rifle, 7mm preferred. M. W. Ryder, 84 Forest St., Lowell, Mass. 2-42

WANTED—Reasonably priced, excellent Zeiss Zielsechs 6X, or Zielacht 8X scope. Dr. Milton T. Rees, 562 J. Street, Idaho Falls, Idaho. 2-42

WANTED—10 Ga. L. C. Smith Double Hammerless, automatic ejectors, steel barrels (not Damascus). Must be in good condition. W. Kohl, 102 S. Glendale, Peoria, Ill. 2-42

WANTED—Primers; Remington #9½ and Winchester #120, must be N.C.-N.M. W. H. Janssen, Nokomis, Illinois. 2-42

WANTED—Parker Double GH or GHE very good or better 12 gauge 28 inch field drop pistol grip. State condition-choke-cash prize-examination privilege. Earl Eby, Clearview Terrace, West Orange, N.J. 2-42

WANTED—Any of the following: .45 Frontier Target; .38 or .32 Officers Model; .32 Police Positive Target; all very good to perfect. Reloading machine and tools for above. Percy A. Shaw, 1401 West 3rd St., Little Rock, Ark. 2-42

**WANTED—Cash for S. & W. 1917, Lugers, Colt Automatics, Springfield. Enfield, Krag Rifles, and all size ammunition. Hudson, R-52 Warren Street, New York. 2-42**

WANTED—Walther P. P. Model .22 Automatic Pistol. Have various handguns for sale. William Kirkpatrick, 104 N. Broadmoor, Topeka, Kansas. 2-42

WANTED:—Model H-E Hi-Standard or Colt Woodsman. Would consider good buy, .45 Auto or .357 Magnum. L. J. Brennan, 94 N. Transit Road, Lockport, N. Y.

WANTED—Colt 45 Auto with 22 conversion unit. Also 38 O.M.T. State condition and price. Bill Herring, U.S.S. Mustin (413), c/o Postmaster, New York City. 2-42

**COLT'S and SMITH and WESSON'S WANTED in 32, 380, 45 Automatics; 357 Magnum, 38 Special, 38-44, 44 Special, 45 Revolvers, also Colt Frontiers. Give complete description and condition of each gun including price. Hollywood Gun Shop, 5216 Hollywood Blvd., Hollywood, Calif. 2-42**

WANTED—Type "C" Stock for Service or N.M. '03 Springfield. Chester Williams, 11 Orchard St., Cambridge, Mass. 2-42

WANTED—C Grade 16 gauge Marlin Shotgun. Describe condition. Dwight Copple, 17143 Ilene, Detroit, Michigan. 2-42

WANTED—One Belgian make Browning Automatic Shot Gun, barrel 12 gauge, must have raised, ventilated rib, 28" long and full choke. John Moran, 1935 Martindale Avenue, Indianapolis, Indiana. 2-42

WANTED—50-140 Winchester Ex. or 50-3¼ Sharps cartridges, either empty or loaded, state price. Charles H. Bradford, Pomona, California. 2-42

WANTED—Good or better reasonably priced: Super .38 Automatic; Ace .22 Automatic; .38 Special in any model Colt or Smith and Wesson about six inch barrel. Give complete description and price F. O. B. your town. Ralph Albee, Weed, California. 2-42

WANTED—Powder scale, 30 cal. lubricator and sizer, Scope for 70, M1 bullets, Swift cases, Spotting scope. Dr. W. S. Parker, P. O. Box 98, Coachella, Calif. 2-42

WANTED—Colt Frontier, good or better; .38 Cal. All letters answered. George S. Barkman, 405 Main Street, Laurel, Maryland. 2-42

WANTED AT ONCE:—410 or 28 gauge pump, Winchester; Marlin 410 over-and-under. J. W. Hartwell, 61 Ten Eyck, Albany, N. Y.

WANTED—Will buy for cash. Colt .22, .45 Service Model Conversion Unit with Floating Chamber. State present condition. Lt. J. P. Capuano, 187th F. A., Ft. Ethan Allen, Vt. 2-42

WANTED—.22 target pistol, 12 gauge automatic, Weaver 1X shotgun scope, very good or better. V. Jandasek, 614 Sheridan, South Bend, Indiana. 2-42

**WANTED FOR CASH**—Prism Binoculars, Field Glasses, Microscopes, Sextants, Surveyors and Builders Levels. Give description and price in first letter, all mail answered. Big Ben Mercantile & Loan Co., 179 Third Street, San Francisco, Calif. tf

WANTED—8 x 30 Carl Zeiss Binoculars, center adjustment for both lens, individual adjustment on right lens. Would like case. John Moran, 1935 Martindale Avenue, Indianapolis, Indiana. 2-42

WANTED—Pay $30.00—Colt O. M. T. 22 or K-22, very good. Robert Walsh, 191 Scotland Rd., Orange, N. J. 2-42

**CASH PAID** for Used Lugers, Revolvers, Rifles and Shotguns. Stoeger Arms Corp., 507 5th Avenue, New York. tf

WANTED—Hi-Standard Pistol Model A-D-E, and 22 Target Rifle and Scope. Sell or trade 9mm Luger. Rudolph Hammann, 1441 W. Hopkins St., Milwaukee, Wisconsin. 2-42

WANTED—Western or Remington Pistol Primers; size 1½ Shotgun Wads, Empties. W. S. Tanksley, Bristol, Tenn. 2-42

**CASH FOR** your Guns and Ammunition. State lowest cash price and describe fully in first letter. All mail answered. Alliance Gun Exchange, 1405 S. Rockhill, Alliance, Ohio. 7-42

WANTED—Execellent Winchester Hi-Side Single Shot Action and Model 86, 45-70 or 45-90. F. S. Henika, Lubbock, Texas. 2-42

WANTED—38 Military Auto and 4½" Woodsman or High Standard, fair or better. Major Hatfield, O'Keeffe, W. Va. 2-42

WANTED—Browning O. & U. or Parker 16, 28" full and modified, 22 cal. rifle; 22 Target Revolver; Browning 16, full. Burton Rand, Bryantville, Mass. 2-42

**WANTED FOR CASH**—Shotguns, Rifles, Pistols and Revolvers. Can use all makes and types. Describe guns fully in first letter, state price, all mail answered. Big Ben Mercantile and Loan Co., 179 Third Street, San Francisco, Calif. tf

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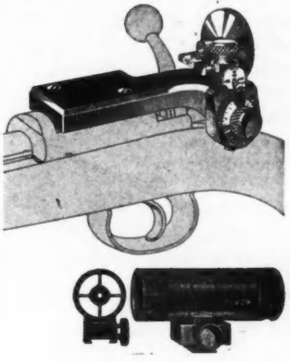

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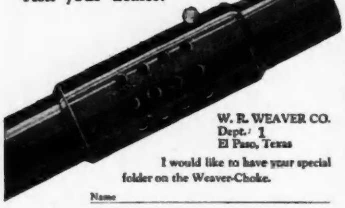

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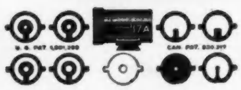

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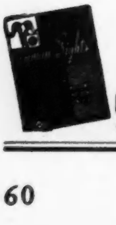

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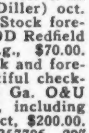

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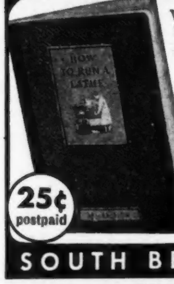

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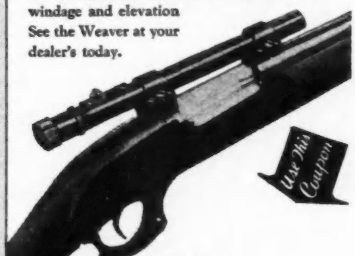

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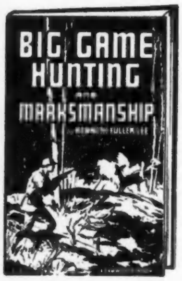

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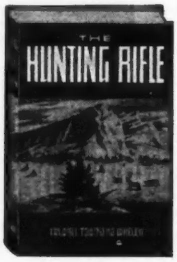

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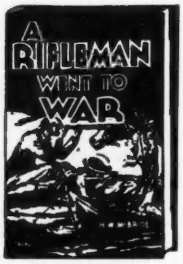

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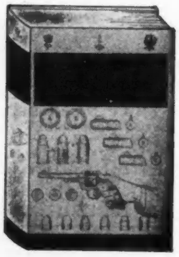

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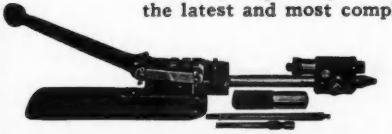

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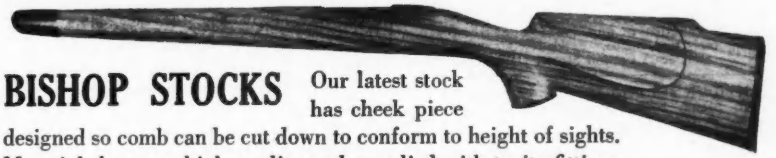

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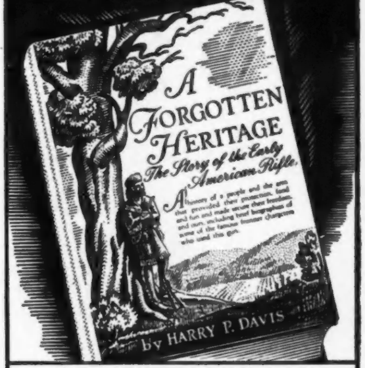

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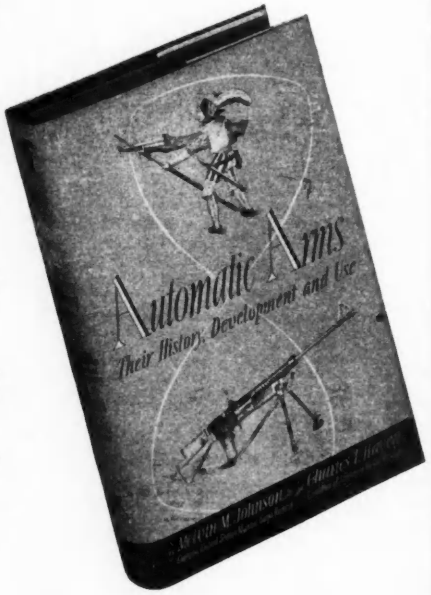

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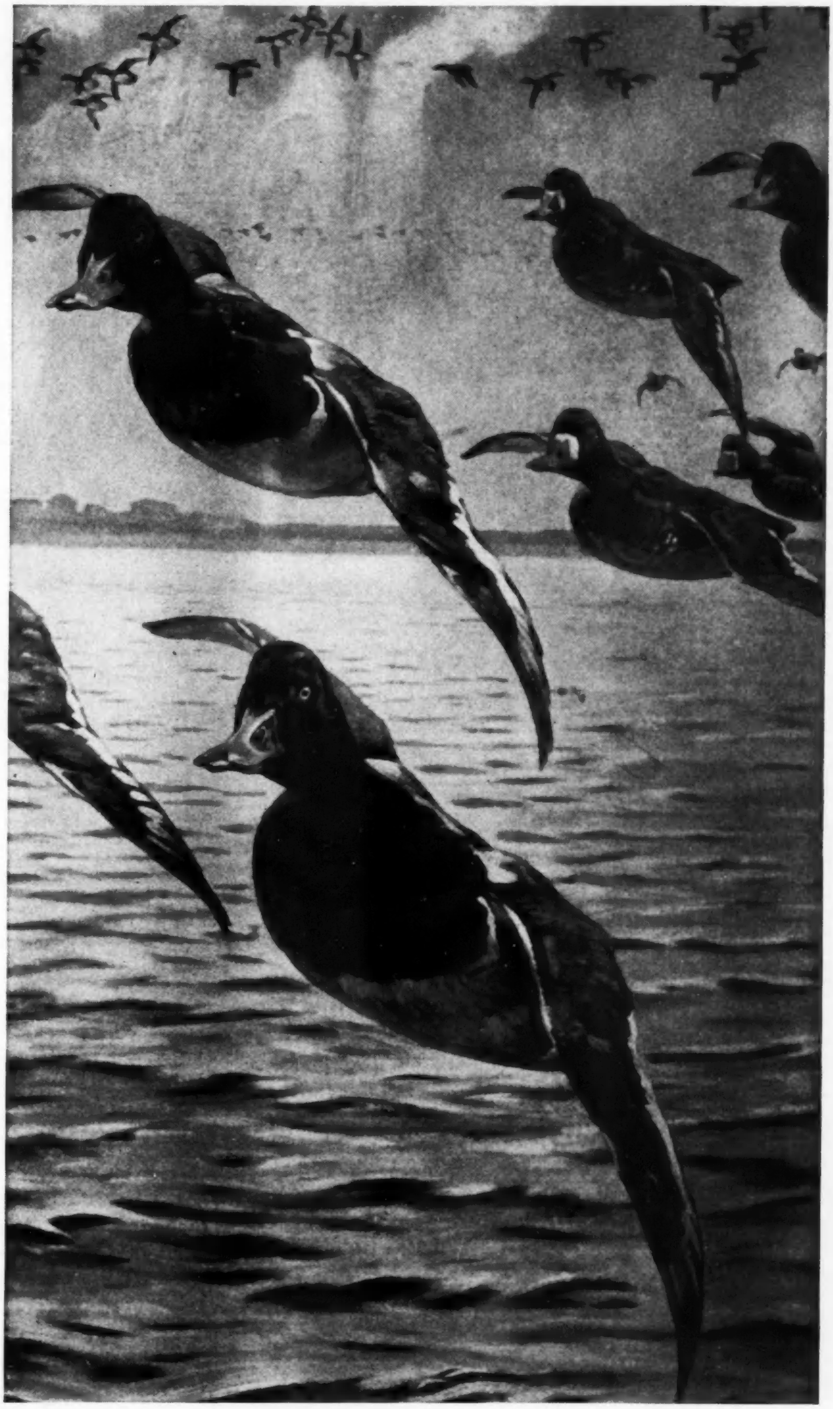

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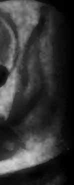socia-
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